

---

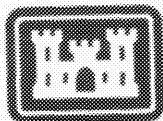
Navigation Improvement Study  
Detailed Project Report and  
Environmental Assessment

---

# Point Judith Pond

## Port of Galilee

### Narragansett, Rhode Island



**US Army Corps  
of Engineers**  
New England Division

POINT JUDITH POND  
PORT OF GALILEE  
NARRAGANSETT, RHODE ISLAND

NAVIGATION PROJECT

DETAILED PROJECT REPORT  
AND  
ENVIRONMENTAL ASSESSMENT

DEPARTMENT OF THE ARMY  
CORPS OF ENGINEERS  
NEW ENGLAND DIVISION

## SYLLABUS

This report presents the findings of a study which investigated the existing navigation conditions in Point Judith Pond, Port of Galilee, Rhode Island, to determine the feasibility of Federal involvement in modifications to the existing general navigation facilities for commercial fishing vessels. The present conditions in Point Judith Pond, where there is an existing Corps project, do not meet the demands of an expanding commercial fishing fleet in the area. Existing berthing and offloading facilities have reached capacity and will not allow for continued fleet expansion.

In order for the fleet to experience continued growth, new areas must be made available for development. The only practical option for improving navigation conditions is to modify existing channels and or provide new channels to enhance this development. This study analyzes several alternatives for channel improvement and the benefits each alternative provides to the existing fleet.

Several alternatives were developed and evaluated in order to provide channel access into areas where fleet growth might expand. After analyzing the alternatives separately, it was determined that a combination of two alternatives, Plans A & B, provides the optimum plan of improvement that maximizes project benefits. The recommended plan consists of widening the existing 15-foot deep West Bulkhead channel by 50 feet and then extending this same channel into the North Basin area at a width of 150 feet and a depth of 10 feet below mean low water (MLW).

Approximately 22,400 cubic yards of silty sand would be removed by hydraulic dredging from the West Bulkhead and North Basin areas. The dredged material would be pumped to a state maintained containment area already existing in Galilee. This inland containment site is approximately 1500 feet from the proposed work area.

The total cost for the recommended plan, based on January 1989 price levels, would be \$253,000. Annual benefits would be \$178,800 as compared to annual costs of \$ 29,900 resulting in a benefit to cost ratio of 6.0. Local interests would be required to contribute 20 percent of the first cost of the Federal project, or \$49,000. These cost sharing requirements are as specified in the Water Resources Development Act of 1986 (Public Law 99-662).

Future maintenance dredging would be accomplished by the Federal government contingent upon the availability of maintenance funds, the continuing justification of the project and the environmental acceptability of maintenance activities.

The Division Engineer finds that modification of the existing Federal navigation project in Point Judith Pond, Rhode Island would result in significant economic benefits to the commercial fishing fleet and the local economy, exceeding annualized costs. As documented in the Environmental Assessment, there are no significant environmental impacts expected as a result of the proposed plan. For these reasons, Federal involvement in the navigation improvements in Point Judith Pond are recommended.

POINT JUDITH POND, PORT OF GALILEE  
NARRAGANSETT, RHODE ISLAND  
RECOMMENDED PLAN  
PROJECT SUMMARY

GENERAL NAVIGATION FACILITIES

(CUBIC YARDS REMOVED FOR GNF)	(22,400 cy)
CONSTRUCTION COST INCLUDING CONTINGENCIES	\$197,000
ENGINEERING AND DESIGN	19,000
SUPERVISION AND ADMINISTRATION	29,000
	<hr/>
FIRST COST	\$245,000
NAVIGATION AIDS	\$ 8,000
	<hr/>
TOTAL PROJECT COST	\$253,000
ANNUAL COST	\$ 29,900
ANNUAL BENEFITS	\$178,800
ANNUAL NET BENEFITS	\$148,900
BENEFIT COST RATIO	6.0
COST APPORTIONMENT:	
NON-FEDERAL COST SHARE (20%)	\$ 49,000
FEDERAL COST SHARE (80%)	\$196,000



## TABLE OF CONTENTS

	<u>Page No.</u>
1.0 INTRODUCTION	1
1.1 Study Authority	1
1.2 Scope of Study	1
1.3 Prior Studies and Improvements	2
1.4 Study Participants and Coordination	3
1.5 The Report	3
2.0 PROBLEM IDENTIFICATION	4
2.1 Existing Conditions	4
2.2 Conditions if No Federal Action is Taken	6
2.3 Problems and Needs	7
2.4 Planning Constraints and Objectives	8
3.0 FORMULATION OF PLANS	10
3.1 Plan Formulation Rationale	10
3.2 Management Measures	10
3.3 Analysis of Alternatives Considered	11
4.0 COMPARISON OF DETAILED PLANS	13
4.1 Project Costs	13
4.2 Project Benefits	16
4.3 Comparison Summary	16
5.0 ASSESSMENT AND EVALUATION OF DETAILED PLANS	19
5.1 Dredging Impacts	19
5.2 Disposal Impacts	19
5.3 Economic Impacts	20
6.0 SELECTION OF A PLAN	21
6.1 The Selected Plan	21
6.2 Implementation Responsibilities	21
6.2.1 Cost Apportionment	21
6.2.2 Federal Responsibilities	21
6.2.3 Non-Federal Responsibilities	22
6.3 Conclusions	22
7.0 RECOMMENDATION	24
DRAFT LOCAL COOPERATION AGREEMENT	

### LIST OF TABLES

	<u>Page No.</u>
1. Description of Detailed Plans	14
2. Costs of Detailed Plans	15
3. Annual Benefits of Detailed Plans	17
4. Economic Impacts	18

### LIST OF FIGURES

1. Project Location
2. Aerial Photographs
3. Existing Federal Project
4. Alternative Plans of Improvement
5. Net Benefit Curve - North Basin Channel
6. Recommended Plan of Improvement

### LIST OF APPENDICES

1. Environmental Assessment and Section 404 Evaluation
2. Engineering Investigations, Design and Cost Estimates
3. Economic Assessment
4. Pertinent Correspondence

## 1.0 INTRODUCTION

This Detailed Project Report (DPR) is the result of an engineering, economic and environmental feasibility study of navigation improvements in Point Judith Pond at Narragansett and South Kingstown, Rhode Island. This study is limited to the southern portion of Point Judith Pond (see Figure 1) which is located on the central Rhode Island coastline, immediately inland from the Point Judith Harbor of Refuge. The study site is about 40 miles south of the city of Providence. The harbor is home to the fastest growing commercial fishing fleet in New England and is the largest commercial fishing port in the state of Rhode Island.

This study was requested by the towns of Narragansett and South Kingstown in letters dated 20 May 1983 and 6 March 1984 respectively. These letters requested that the Corps of Engineers investigate the feasibility of Federal participation in improving the navigation conditions in Point Judith Pond. The specific local interest is the investigation of providing expanded navigational channels to alleviate crowded conditions at the berthing and offloading areas and to provide access to newly developed areas needed to accomodate the rapid expansion of the commercial fishing fleet.

A reconnaissance scope Initial Appraisal Report, completed in 1985, concluded that a further detailed study of the navigation conditions in Point Judith Pond be carried out. This DPR is a summary of that detailed study.

### 1.1 Study Authority

This DPR is prepared and submitted under the authority and provisions of Section 107 of the 1960 River and Harbor Act, as amended.

### 1.2 Scope of Study

The scope of this Detailed Project Report provides for the following:

- o Identifying existing conditions and historical trends within the study area,
- o Determining the navigational problems and needs of the area,
- o Determining the most probable future condition without Federal improvements,
- o Developing alternative improvement plans,
- o Evaluating and comparing the engineering, economic, environmental, and social impacts of the alternative plans, with respect to the future condition,
- o Recommending improvements that are implementable, economically feasible, environmentally and financially acceptable, and socially beneficial.

The geographic scope is:

- o The lower portion of Point Judith Pond which includes the West Bulkhead and North Basin areas in the Port of Galilee,

- o The natural channel area, on the west side of the Pond, from the State Pier in Jerusalem to High Point,
- o Areas of possible impacts beyond the immediate vicinity of Point Judith Pond, including the dredged material disposal site and the areas from which resources are harvested by the commercial fleet.

### 1.3 Prior Studies and Improvements

The Point Judith area has been the subject of navigation improvement studies dating back to 1873 when the first survey of navigation conditions at Point Judith was conducted by the Corps of Engineers. Early studies focused on providing a harbor of refuge through the construction of offshore breakwaters. Work was initiated on the first of three breakwaters in 1891.

The 1896 River and Harbor Act authorized a survey of Point Judith Pond for the purpose of securing a stable entrance to the pond. The natural outlet of the pond was a shallow stream navigable only at high tide. The survey report in 1897 recommended construction of an entrance to Point Judith Pond 300 feet wide with a central depth of eight feet and the dredging of a channel of the same depth for a distance of one mile to reach the natural eight foot depth in the pond. No Federal work was initiated but in 1901 the town of South Kingston began work on dredging a channel through the pond and cutting a channel through the beach separating the pond from the ocean. In 1902 the state of Rhode Island began construction of two jetties to protect the entrance through the beach. This initial entrance channel was 75 feet wide and seven feet below mean low water (MLW).

The River and Harbor Act of 1909 authorized a preliminary examination of Point Judith Pond for the purpose of providing a navigable channel into the pond, but the findings of the report were that Federal funding was not justified.

In 1934 the state of Rhode Island performed additional work in Point Judith Pond, extending and rebuilding the east jetty, dredging a 35 acre basin to a depth of 12 feet below MLW inside the entrance, constructing state piers at the villages of Jerusalem, in South Kingston, and Galilee, in Narragansett, constructing bulkheads along the basin, and dredging a channel north to Wakefield at the head of the pond.

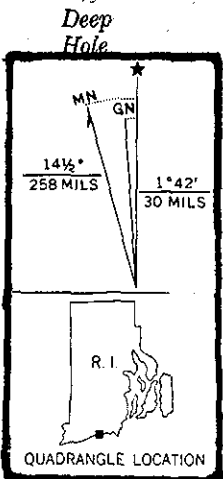
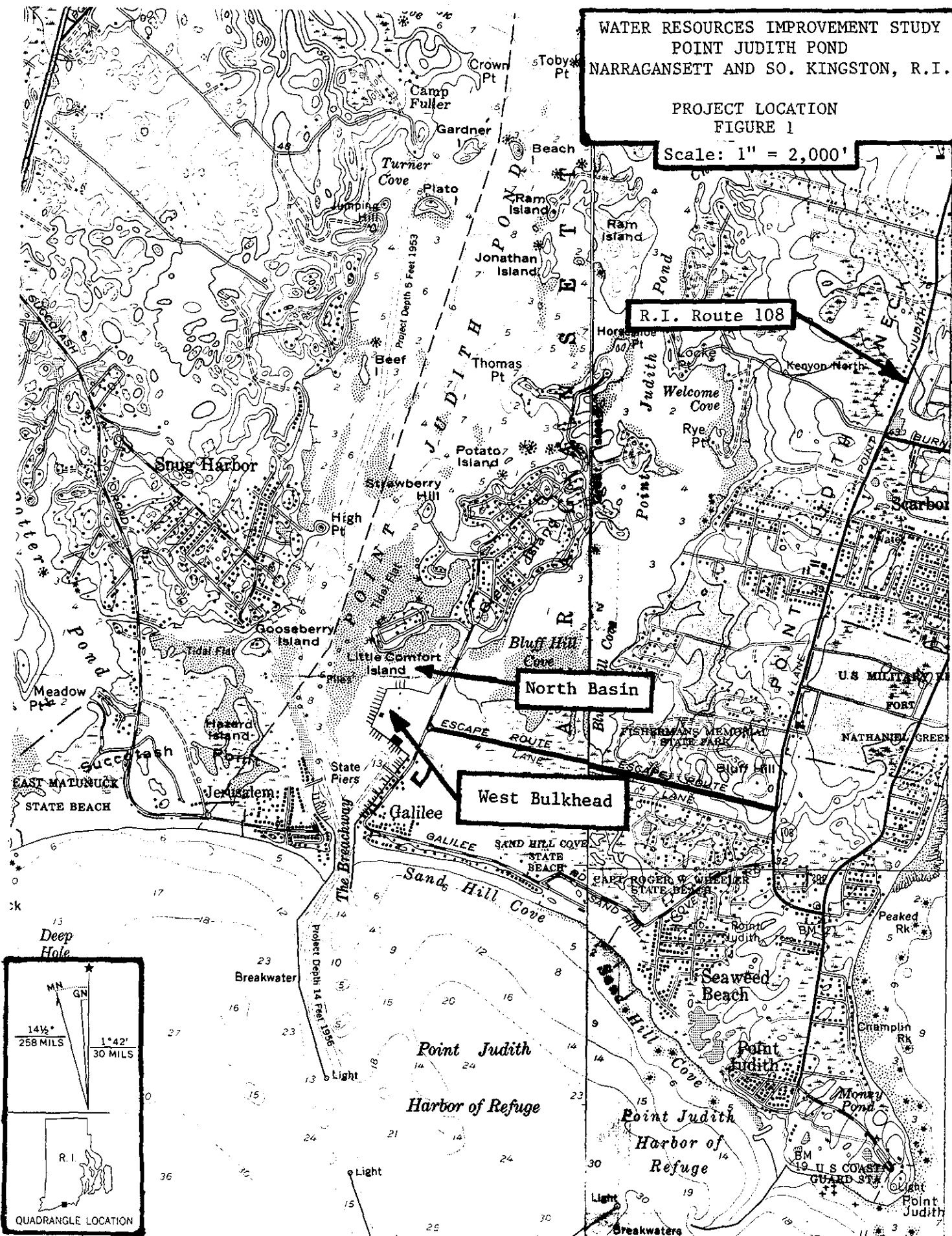
In 1944 another Federal study of possible improvements to Point Judith Pond was authorized, and in 1946 the Board of Engineers for Rivers and Harbors recommended:

"a channel into Point Judith Pond 15 feet deep and 150 feet wide...to a point 100 feet north of the state pier at Jerusalem with a branch 15 feet deep and 200 feet wide...extending to a point 100 feet north of the state pier at Galilee; an anchorage basin just inside the entrance 10 feet deep with an area of about 5 acres; sand arresting structures... at the entrance; a channel 6 feet deep and 100 feet wide from the -15 foot west branch channel to the vicinity of Wakefield with an anchorage basin 6 feet deep and about 5 acres in area at the upper end."

WATER RESOURCES IMPROVEMENT STUDY  
POINT JUDITH POND  
NARRAGANSETT AND SO. KINGSTON, R.I.

PROJECT LOCATION  
FIGURE 1

Scale: 1" = 2,000'



This work was authorized in 1948 and the work was completed two years later.

In the 1960's, House and Senate resolutions provided authority for conducting a feasibility study on navigation improvements at Point Judith. It was later determined during the study that the project would qualify under the Continuing Authorities Program. Funds were provided to complete and submit a Detailed Project Report on the findings, under authority of Section 107 of the River and Harbor Act of 1960, as amended. The report, completed in 1976, recommended extending the existing 15-foot deep east channel 1400 feet to the north. Constructed in 1977, this 150-foot wide channel provided improved access to the commercial piers along the state bulkhead at Galilee (see Figure 2).

#### 1.4 Study Participants and Coordination

The preparation of this report required the close cooperation of Federal agencies, state and local government agencies, elected officials of the state and local governments, local commercial fishermen, and interested individuals. Record of public involvement, agency coordination, and project correspondence are contained in Appendix 4.

The Rhode Island Department of Environmental Management (DEM), which operates the Port of Galilee, is the Project Sponsor. DEM recently finished construction of several shore facility improvements in the West Bulkhead and North Basin areas.

#### 1.5 The Report

This DPR summarizes the investigation of alternatives for providing navigation improvements at the lower end of Point Judith Pond. The initial steps in the study included a comprehensive inventory of available information, performance of topographic and hydrographic surveys, environmental testing and sampling, and preparation of base plans. Extensive efforts were expended in contacting public officials to provide information and seek input in the study process. Based on these efforts, planning objectives and constraints were developed and plans formulated. These plans were developed and evaluated in coordination with state authorities and the final alternative plans were selected for detailed study.

## 2.0 PROBLEM IDENTIFICATION

This portion of the report discusses the nature and scope of the problems necessitating navigational improvements, and establishes the planning objectives and constraints that direct subsequent planning tasks.

### 2.1 Existing Conditions

Point Judith Pond is located on the southern coast of Rhode Island within the towns of South Kingston and Narragansett, Washington County. The area is bordered to the east by Narragansett Bay, to the west by the towns of Charlestown and Richmond, to the north by the towns of Exeter and North Kingston, and the south by Block Island Sound and the Point Judith Harbor of Refuge. The towns of South Kingston and Narragansett are each composed of several villages. The village of Wakefield can be found at the northern end of Point Judith Pond, while the villages of Jerusalem and Galilee straddle the entrance to the Pond at the southern end. Galilee is located on the eastern shore and Jerusalem sits opposite it on the western shore. Approximately 35 miles south of Providence, Rhode Island, the Pond is most easily accessed via U.S. Route 1 and state Route 108. Point Judith Pond and the surrounding location can be found on the U.S. Geological Survey Map entitled "Kingston, R.I.", or on the National Ocean Survey Chart #13219 entitled "Point Judith Harbor".

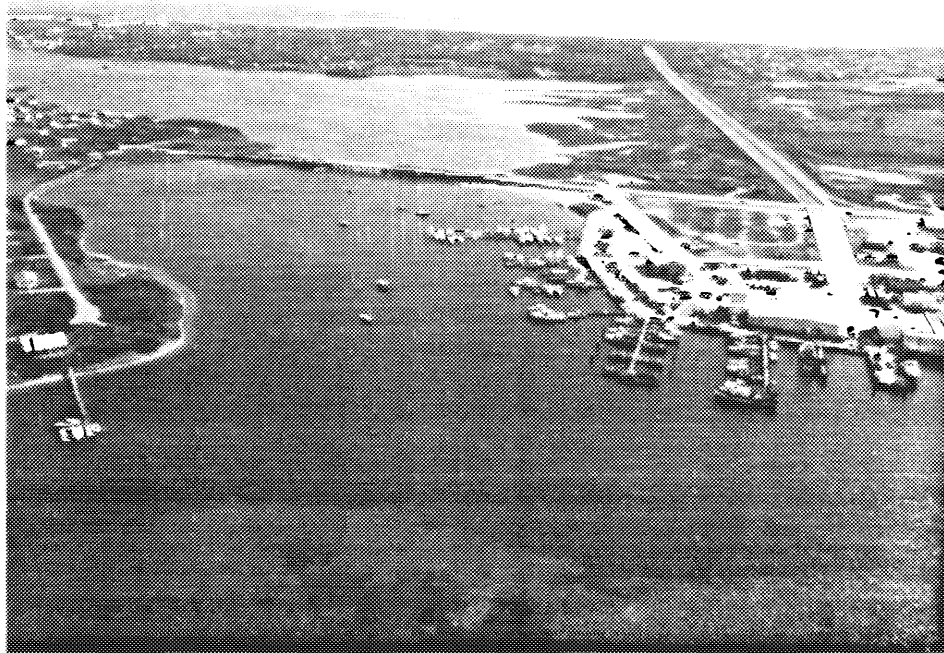
The Point Judith area is located in one of Rhode Island's busiest tourist areas. East Matunuck State Beach, Sand Hill Cove Beach and Scarborough State Beach are all nearby and continue to attract large numbers of summer tourists. As of 1985, statistics show the year round population of Narragansett to be 16,000 people while the summer population soars to well over 70,000. The area also provides access to some of Rhode Island's best recreational fishing.

The villages of Galilee and Jerusalem contain most of the service facilities available for commercial and recreational boating activities. Due to the proximity of these villages to the prime fishing areas of Georges Bank and the protection afforded them by the Harbor of Refuge, the Point Judith fleet has a considerable advantage over other commercial fishing communities. Jerusalem contains docking space as well as a state built pier. However, Galilee has seen the most in the way of development. The state of Rhode Island has spent much effort in building up the port to the point where it has become a leader in the state's commercial fishing industry. The Port of Galilee also contains a state built pier, sustains several charter fishing vessels and provides a home for one of the ferries that run to Block Island. Commercial fishing vessels and shore processing operations have been relocating to Point Judith from surrounding Rhode Island and Connecticut harbors for several years. The Stonington Seafood Company, formerly of Stonington, Connecticut is the port's largest seafood processor.

Though the area has continued to experience growth, it is limited due to the amount of available building space. Almost all available frontage has been utilized on both sides of the lower Pond. State and local authorities continue to seek new ways of commercially developing the area to meet the needs of a fishing industry lacking in adequate berthing and offloading area capacity.



View to the West - Port of Galilee with Snug Harbor in the background



View to the East - West Bulkhead and North Basin areas in the foreground to the right

#### AERIAL PHOTOGRAPHS

POINT JUDITH POND  
NARRAGANSETT, RHODE ISLAND

FIGURE 2

Photos taken October, 1985



The dominant land use in the vicinity of the Port of Galilee is commercial. The commercial properties include restaurants, stores and lodgings at the harbor. Galilee's fishing success over the years has been due to the Point Judith Fisherman's Cooperative and their shoreside facilities that are based in the village. A Federal channel on the eastern edge of the Pond services the charter boat fleet and Block Island Ferry as well as the commercial fishing fleet. Galilee also has a diversified recreational economy, where small boating services, marinas, beaches and other tourist attractions are available.

The Point Judith Harbor area includes both an offshore Harbor of Refuge protected by three breakwaters, and an anchorage and berthing area in lower Point Judith Pond. The Point Judith Pond anchorage and berthing area is located between the communities of Galilee and Jerusalem and is the site of several state owned piers and a Coast Guard pier. Point Judith Pond is a tidal lagoon approximately 4 miles long and somewhat more than a mile wide with several islands, most developed as residential summer communities. This area of southern Rhode Island is composed of rocky coasts and long beaches lying between low head-lands on the coast, while inland low-lying areas bordering saline ponds and salt marshes characterize the area. Entrance to the Pond begins with passage through the Federally constructed 770 acre Harbor of Refuge which consists of three breakwaters. The protected waters of Point Judith Pond are generally less than 5 feet deep, except in those areas designated as Federal channels.

The existing Federal project in Point Judith Pond consists of a 15-foot deep (MLW) 150-foot wide entrance channel from the Point Judith Harbor of Refuge through the Breachway into the Pond, a west channel 15 feet deep and 150 feet wide to a point 100 feet north of the state pier at Jerusalem, an east channel 15 feet deep and 200 feet wide to a point 100 feet north of the state pier at Galilee, continuing west and north to a 15-foot deep 150-foot wide channel along the West Bulkhead. Between the east and west channels is a 10-foot deep 5-acre anchorage. A 6-foot deep 100-foot wide channel extends north from High Point in Snug Harbor approximately 4,900 feet to Turner Cove. The same size channel also extends from the north side of Harbor Island approximately 1,800 feet to a 6-foot deep anchorage in Wakefield. A complete plan of the Federal project can be seen in Figure 3.

As previously mentioned the state of Rhode Island has constructed two state piers, one in Galilee and one in Jerusalem. In addition, they installed a bulkhead along the Galilee waterfront in 1934. The bulkhead and adjacent area contain piers for berthing space as well as fish packing and processing houses to service the large commercial fleet that use the port.

Repair facilities for boats are located at High Point in the village of Snug Harbor. In order to reach these facilities vessels must use the naturally existing channel that runs from Jerusalem to High Point. However, due to a lack of depth and width in this natural channel and a mean tidal range of 2.8 feet, large offshore vessels often risk grounding out trying to reach the 12-foot deep marine repair facilities at High Point.

The Point Judith area is a prime commercial fishing location due to its easy access to Block Island Sound, Rhode Island Sound, the Nantucket Shoals and the Continental Shelf. Current figures show the Point Judith area accounting for 55 percent of the total statewide commercial fish landings and with a greater rate of growth in the value of these landings than has occurred statewide. As of 1985, Point Judith ranked twelfth in the country in terms of fish landings and value of those landings.

Though Point Judith Pond supports a fleet of commercial and recreational craft, almost all commercial activity centers around the Port of Galilee. There are currently 196 commercial vessels assigned berths in the Port of Galilee. Of these, 151 are commercial fishing vessels. The other 45 boats are comprised of charter, sport fishing, party and excursion vessels. The commercial fleet consists of onshore and offshore lobster boats and draggers. The trend of the offshore fleet, especially with the passage of the Fisheries Conservation and Management Act (1976) and the availability of new financing plans for equipment and vessels, has been toward larger steel hulled vessels. Nearly half the fleet is made up of large offshore draggers. The state of Rhode Island has been committed to the task of increasing the amount of permanent berths available for the fleet (increased from 74 in 1974 to 151 in 1985). However, with a continued increase in fleet size, deeper draft boats are encountering inadequate offloading facilities and navigational difficulties in the Port of Galilee. The state recently completed various docking and bulkhead improvements in order to continue the development of Galilee as a successful fishing port.

Point Judith has fast become one of Rhode Island's leading fishing bases. Between 1978 and 1985 Point Judith's commercial fish landings increased by 200 percent in comparison to the State's 126 percent increase. By 1985, Point Judith ranked fourth in New England commercial fish landings behind only Gloucester, Mass., New Bedford, Mass., and Rockland, Maine. With the increased value of fish as a natural resource and the location Point Judith affords to the fishing grounds, local interests as well as the state of Rhode Island continue to seek new anchorage and berthing space in the Point Judith area.

## 2.2 Conditions If No Federal Action Is Taken (Without Project Condition)

If no Federal action is taken to improve the navigation conditions at Point Judith Pond, the present conditions and current trends will continue. Federal maintenance of the existing Federal project would continue as required.

The state of Rhode Island has finished their construction work in the Port of Galilee. This work entails bulkhead and pier improvements on the West Bulkhead and North Basin areas. The Point Judith Fishermen's Cooperative has also finished with their work to complete new offloading facilities on the West Bulkhead. All of these improvements will help to alleviate the demand for more offloading facilities and berthing space in the area. However, the work will not correct the navigation problems that exist in the east branch channel or provide for navigable channels in the North Basin area and to the Snug Harbor repair facilities.

EXISTING FEDERAL PROJECT  
FIGURE 3



The without-project condition is a continuation of the existing condition. As a result of inadequate channel width and depth, groundings, collisions and tidal delays will continue to plague the commercial fleet. Larger vessels will continue to have problems accessing the repair facilities at High Point in Snug Harbor and will need to travel to other ports for repair work. It is apparent that as the fleet continues to grow in vessel size as well as number, these navigational problems will intensify thereby hindering the local fishing industry's efficiency.

There are several other elements within the without-project condition that should be listed. Fish catch is difficult to predict and will continue to be so as the fleet at Point Judith has had a history of flexibility in harvesting any species of fish, depending on the market and availability. Furthermore, fish availability does not appear to be at risk as the state continues to invest in shorefront improvements. Access to the fishing grounds appears to be unlimited at this time and will only be regulated by market conditions in the form of net returns. The market itself will continue on its present course of improvement as experienced over the last ten years. The fleet will continue to grow based on its past record; continuing to fish those species of fish which are marketable as well as seeking to open up new markets for underutilized fish.

Some party other than the Federal government could provide for the improvements to the channels in Point Judith Pond. However, this is unlikely to happen as the state of Rhode Island has focussed its efforts and available funds on the improvement of shorefront infrastructure and are depending on Federally assisted channel dredging. It is also unlikely that the local authorities would be capable of securing all the funds necessary to invest in channel improvements on their own.

### 2.3 Problems and Needs

The Point Judith Pond commercial fishing fleet has grown to a point where all available berthing and offloading space has been utilized to its fullest extent. The lack of appropriate unloading facilities has caused delays of up to 48 hours for some boats as they wait to unload their catch; resulting in excess labor and fuel costs. In order for the fleet to operate efficiently and experience continued growth, new areas must be made available for development. To correct these problems the state of Rhode Island and local authorities have recently finished improvement work to the bulkhead, the addition of several new offloading facilities and the addition of new piers to the West Bulkhead and North Basin areas. State and local authorities have also completed the berthing dredging needed in conjunction with this work. Since the state berthing expansion project is already complete, it is considered part of the without-project condition. Therefore, there is no non-Federal dredging anticipated within the scope of this study.

The principal navigation problem at Point Judith is the lack of adequate access to the berthing and offloading areas. The narrowness of the east branch channel, opposite the West Bulkhead, causes the larger vessels (60 to 95 feet in length) to often run aground as they attempt to maneuver into offloading facilities, berths and around other vessels.

Inadequate depths in the North Basin and the natural channel area between Jerusalem and High Point, cause tidal delays and grounding damages to those vessels accessing these areas.

If the commercial operators at Point Judith are to continue to be competitive in the New England region fish industry, the larger, deeper draft vessels now utilizing Point Judith Pond as a base of operations, must be better accommodated. If not, the existing commercial fleet will continue to experience delays, groundings and berthing difficulties reducing the efficiency of their fishing operations. Therefore, the need at Point Judith is to make modifications to existing channels and/or provide new channels that would help alleviate these problems.

#### 2.4 Planning Constraints and Objectives

Planning constraints are those parameters that limit the implementation of any proposed plan of improvement and serve to eliminate from consideration all those possibilities that offer no acceptable degree of satisfaction. These constraints can include natural conditions, economic factors, social and environmental considerations and legal restrictions.

In the case of Point Judith Pond, the major constraints can be identified as natural. Point Judith Pond is a tidal lagoon that is relatively shallow across most of its area (5 feet below mean low water or less). As one looks at the Pond it becomes apparent that the logical areas for improvement are those places that currently handle deep draft vessels. The only areas capable of this are the ports of Galilee, Jerusalem and Snug Harbor. The High Point repair facilities at Snug Harbor would require extensive channel dredging to make them accessible. Whereas the dredged material is primarily sand, the distance and location needed to dispose it could be a problem. Jerusalem, though potentially a site for development is not scheduled for improvement by state authorities in the near future.

The Port of Galilee has been developed extensively thus far and recently underwent construction to provide additional improvements, especially in the North Basin area. The North Basin is located between the West Bulkhead and Little Comfort Island. A tidal flat links the main pond to Bluff Hill Cove. A channel extension into the North Basin would provide necessary access to the new state constructed docks. Improvements to the east branch channel would also provide easier access to the new offloading facilities and docks that were added to the West Bulkhead.

The Federal objective of water and related land resources project planning is to contribute to national economic development consistent with protecting the Nation's environment, pursuant to national environmental statutes, applicable executive orders, and other Federal planning requirements.

- a. Water and related land resources project plans shall be formulated to alleviate problems and take advantage of opportunities in ways that contribute to this objective.
- b. Contributions to national economic development (NED) are increases in the net value of the national output of goods

and services, expressed in monetary units. Contributions to NED are the direct net benefits that accrue in the planning area and the rest of the Nation. Contributions to NED include increases in the net value of those goods and services that are marketed, and also of those that may not be marketed.

Several planning objectives were identified which specifically address the navigation problems and needs of Point Judith Pond. These objectives are:

- o Reduce the cost of commercial fishing and charter boat operations in Point Judith Pond during the 1990-2040 period of analysis.
- o Contribute to safer conditions for the commercial fishing fleet in Point Judith Pond during the 1990-2040 period of analysis.
- o Reduce projected without-project tidal delays for commercial navigation, specifically at the newly built state fish pier facilities now under construction at the Port of Galilee in Point Judith Pond, during the 1990-2040 period of analysis.

State and local objectives for the project area include the continued development, management and success of the lower Point Judith Pond area as a base for commercial fishing. As recent state sponsored improvement work in Galilee indicates, this specifically includes the provision of new and improved offloading and berthing facilities to accommodate the commercial fishing fleet.

### 3.0 FORMULATION OF PLANS

The consideration of the problems and needs of the study area led to the formulation of alternative plans. These plans are designed to achieve the planning objectives, and are developed with regard to the planning constraints previously identified. State and local sponsor objectives are important considerations as well in the evaluation of alternative plans.

#### 3.1 Plan Formulation Rationale

The formulation of plans for navigation improvements at Point Judith Pond are based on a standard set of criteria. The alternative plan must be complete in that it provides and accounts for all necessary investments or other actions to ensure the realization of the planned effects. The alternative plan must be effective so as to alleviate the specified problems and achieve the specified opportunities. The alternative plan must be efficient, demonstrating a cost effective means of alleviating the specified problems and realizing the specified opportunities. The alternative plan must also be acceptable with respect to acceptance by state and local entities and the public and compatible with existing laws, regulations, and public policies.

Each alternative is considered on the basis of its effective contribution to the planning objectives, and selection of a specific plan is based on technical, economic, and environmental criteria which permits the fair and objective appraisal of the impacts and feasibility of alternative solutions.

Technical criteria require that the optimum plan have the dimensions necessary to accommodate the expected user vessels and sufficient area to provide for maneuvering of boats and development or continued use of shore facilities. All plans must contribute to navigational efficiency and be complete within themselves.

Economic criteria require that the tangible benefits of the navigation improvement exceed the economic costs and that the scope of the project is such to provide maximum net benefits.

Environmental criteria require that the selected plan preserve and protect the environmental quality of the project area. This includes the identification of impacts to the natural and social resources of the area and the minimization of those impacts that adversely affect the surrounding environment. It also includes the assessment of impacts that are incurred during the construction of the proposed navigation improvements and those activities attracted to the area after plan implementation.

#### 3.2 Management Measures

A broad range of management measures can be identified and evaluated as the basis for formulating alternative plans to solve the navigation problems in Point Judith Pond. These management measures are categorized as either structural or non-structural.

Structural measures are identified as those that involve the construction of features that would, to varying degrees, meet the planning objectives developed for Point Judith Pond. These alternatives include the widening and extension of an existing channel as well as the deepening of another. Nonstructural measures involve those solutions which would achieve the same objectives, but would do so without resorting to structural improvements. An example of a nonstructural measure would be the transfer of vessels to neighboring ports with sufficient excess capacity to accommodate additional fishing vessels at existing facilities.

### 3.3 Analysis of Alternatives Considered

A number of navigation improvement alternatives were developed and analyzed during the early stages of the planning study. These alternatives included various dredging options and the possibility of transferring larger commercial fishing vessels to neighboring ports.

The transfer of some of the larger fishing vessels to nearby harbors is predicated on the ability of these harbors to provide adequate protection, capacity, and efficiency of operation. Should such a port not provide adequate features and facilities, it is not likely that any commercial operators would transfer their craft.

It was determined that harbors in the vicinity of Point Judith do not meet the necessary qualifications of an "adequate" fishing port. Investigation found nearby ports, such as Wickford, Rhode Island, suffer from overcrowding and shoaling problems. Other ports cannot handle the potential influx of deep draft vessels due to their lack of adequate berthing space. Another major problem with moving some of the fleet to alternate ports is that none of the nearby ports can service the commercial boats in the same way Point Judith can. The Port of Galilee presently provides the fishermen with the best offloading and fish processing facilities in the area. The closest port that could meet this service is New Bedford, Mass., which is 70 miles by highway and 45 miles by sea from Point Judith. As the state of Rhode Island continues to support the commercial fishing industry at Point Judith, the situation will only improve there.

One alternative was to dredge an 8-foot channel to potential berthing facilities at Snug Harbor via the Gooseberry Island inlet. This plan of improvement was eliminated from the improvement scope due to the fact that commercial boats would have no reason in going to Snug Harbor as this port does not provide the berthing space and offloading facilities needed. Any benefits to be gained would be exclusively recreational.

There are three basic alternatives for improvement that were analyzed in this study. The first two are located in Galilee, while the third plan focuses on improvement dredging to the west branch channel running from Jerusalem to High Point. The three plans will be listed separately and can be found in Figure 4.



North Basin (Galilee) - This area has been the focus of development by the state of Rhode Island. There are five permanent docks located here that provide berthing space for smaller fishing and party boats. The state recently completed construction of a newly extended bulkhead area and two piers that will accommodate 68 additional boats.

The Corps improvement plan would be to establish a Federal channel into the area to provide access to these new piers. Based on the size of the vessels that would use this area, it was determined that for safe, two-way traffic to occur, a channel width of 150 feet would be needed. This improvement alternative would also include dredging the channel to a depth that would allow for safe underkeel clearance based on the squat, pitch and roll of these vessels. Due to a variation in loaded drafts of the vessels that would use the North Basin, three channel depths of 8, 10, and 12 feet were evaluated. As described in the Economic Assessment the 10-foot depth was found to be the most economical (see Figure 5). Therefore, the plan of improvement to be evaluated for the North Basin would be a channel 10 feet deep and 150 feet wide.

West Bulkhead Area (Galilee) - The plan in this location is again concurrent with the state of Rhode Island's plans for development. The state recently removed some old dock and replaced it with a larger one. The new dock provides an offloading and berthing area for 20 deep draft vessels. The 36 smaller boats that were displaced from this area have been relocated to the new facilities in the North Basin. However, as presently experienced, deeper draft vessels will continue to encounter navigational difficulties in the east branch channel opposite the West Bulkhead. These navigation problems are evidenced by the groundings and tidal delays experienced by boats attempting to access this area. Based on the vessel size and the amount of congestion in the area it was determined that widening the channel by 50 feet would provide proper clearance for these large vessels to maneuver to their berths, the offloading docks, and around other vessels. The plan for improvement is to widen the existing 15-foot deep channel from 150 feet to 200 feet.

Jerusalem Channel (High Point) - There is no authorized channel that runs from Jerusalem to High Point in Snug Harbor. The natural channel is 5 to 6 feet deep in many areas making access difficult for those deep draft boats attempting to reach the repair facilities at High Point. These repair facilities have a depth of 12 feet. In order to make the repair marina more accessible to the commercial fleet a Federal channel would need to be established. Based on fleet size statistics, the improvement plan to be evaluated would consist of dredging a channel that is 12 feet deep and 100 feet wide or 15 feet deep and 150 feet wide. The 12-foot option would provide safe passage for the inshore fishing fleet as well as some of the offshore fishing vessels. The 15-foot option would provide safe passage to High Point for the entire Point Judith commercial fishing fleet.

Existing Channel  
6' deep by 100' wide

WATER RESOURCES IMPROVEMENT STUDY  
POINT JUDITH POND  
NARRAGANSETT AND SO. KINGSTON, R.I.

ALTERNATIVE PLANS OF IMPROVEMENT  
FIGURE 4

Scale: 1" = 750'

SNUG  
HARBOR

Proposed Channel  
15' deep by 150' wide

Proposed Channel Widening  
15' deep increased to 200' wide

Proposed Channel Extension  
10' deep by 150' wide

Existing West  
Bulkhead Channel  
15' deep by 150' wide

ESCAPE

Dredge Material  
Dewatering Site

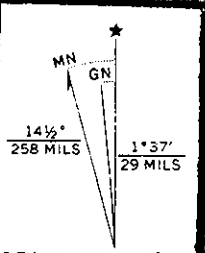
Jerusalem

Galilee

GALILEE

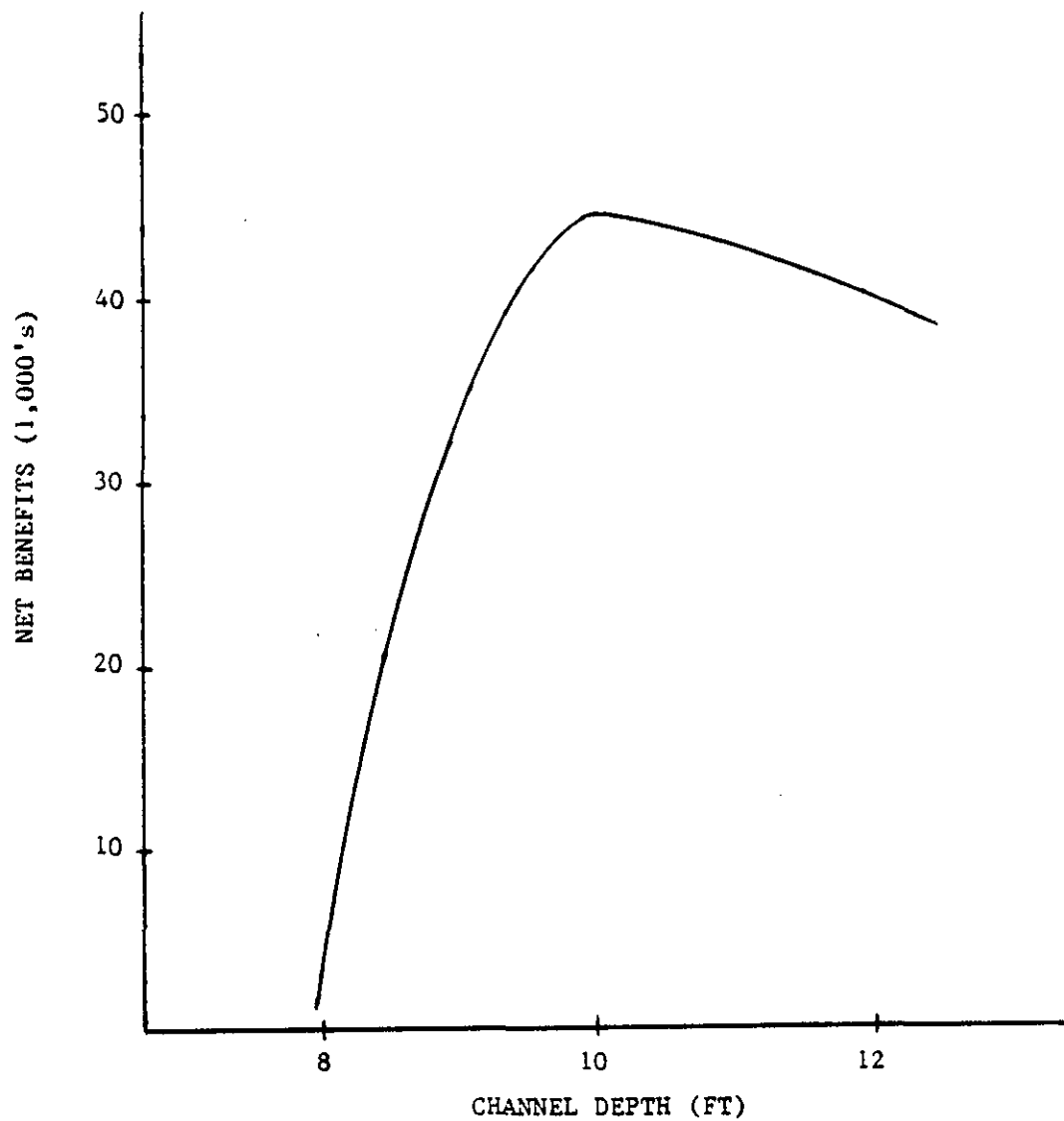
SA

Sand



Existing Channel or Anchorage

Proposed Improvement



Point Judith Pond  
Narragansett, Rhode Island

Figure 5  
Net Benefit Curve  
North Basin Channel

#### 4.0 COMPARISON OF DETAILED PLANS

There are three basic plans of improvement and each differs in benefits, costs, and the amount of material dredged. Plan A would widen the existing 150-foot wide Federal channel, opposite the West Bulkhead in Galilee, to 200 feet. This plan provides necessary channel width for the larger commercial vessels to overcome tidal delays, and avoid groundings on the western side of the channel. Plan B consists of extending this same channel into the North Basin area to service the new berthing and offloading facilities constructed by the state. This channel would be 150 feet wide and 10 feet deep. Plan C consists of dredging a channel from Jerusalem to High Point, in Snug Harbor, to provide better access to the repair facilities located at High Point. Two incremental schemes were studied for the Jerusalem channel, a channel 15 feet deep and 150 feet wide and a channel 12 feet deep and 100 feet wide; titled "C1" and "C2" respectively.

The effects on the marine environment at the dredge site with each plan are similar but increase in scope as the dredging volume increases from Plans A to C, as shown in Table 1. As both Plans A and B provide enhancement to the non-Federal work just completed in Galilee, the combination of these two plans is also evaluated as shown in Table 1. Subsurface analysis indicates there would be no removal of rock needed in any plan chosen. For Plans A and B, dredged material would be placed at an existing state operated dewatering site in Galilee. Material removed under Plan C would be disposed of at East Matunuck State Beach, as beach nourishment. There are no ocean disposal sites near the Point Judith area.

#### 4.1 Project Costs

Dredging for each plan would be accomplished through the use of hydraulic suction dredge. The two Galilee plans would have the material pumped directly to the dewatering site, where it would be stockpiled and later trucked away as useful landfill. The material dredged from the Jerusalem plan, Plan C, would be pumped directly to its disposal site at East Matunuck Beach. The material would then be spread by bulldozer or distributed by pipe relocation techniques and natural wave action to nourish the beach. Cost and annual charges are directly related to the volume of material to be removed, increasing as the dredging depth increases.

Table 2 compares the construction and maintenance costs associated with each of the plans. The combined plan cost for Plans A and B is much less than the sum of the individual jobs due to a reduction in mobilization, demobilization and administrative costs associated with the combined plan. Navigation aids, in the form of two buoys marking the channel bend and termination point, are included in Plan B. Navigation aids would not be necessary for the other improvement plans. The navigation aids are a Federal expense; to be paid by the United States Coast Guard. Maintenance of the navigation aids is included in the annual charges. Costs associated with disposal site preparation such as clearing, dike construction and weirs are not included in the estimates since local interests have provided an existing prepared facility. A more detailed cost breakdown is provided

TABLE 1  
POINT JUDITH POND, RHODE ISLAND  
DESCRIPTION OF DETAILED PLANS

FEDERAL PLAN DESCRIPTION	PLAN C JERUSALEM CHANNEL				
	PLAN A WEST BULKHEAD WIDENING ALONE	PLAN B NORTH BASIN EXTENSION ALONE	PLANS A & B COMBINED	PLAN C1 15-FOOT CHANNEL	PLAN C2 12-FOOT CHANNEL
CHANNEL - DEPTH (FT BELOW MLW)	15	10	15; 10	15	12
- LENGTH (FT)	700	1200	700; 1200	4,000	4,000
- WIDTH (FT)	50	150	50; 150	150	100
DREDGE QUANTITY (cy)					
- ROCK	0	0	0	0	0
- ORDINARY MATERIAL	9,000	13,400	22,400	179,100	64,200
TOTAL DREDGING QUANTITY (cy)	9,000	13,400	22,400	179,100	64,200
*CONSTRUCTION DURATION (WEEKS)	3	3	4	13	6

TABLE 2  
POINT JUDITH POND, RHODE ISLAND  
COSTS OF DETAILED PLANS

PROJECT COSTS	PLAN C JERUSALEM CHANNEL				
	PLAN A WEST BULKHEAD WIDENING ALONE	PLAN B NORTH BASIN EXTENSION ALONE	PLANS A & B COMBINED	PLAN C1 15-FOOT CHANNEL	PLAN C2 12-FOOT CHANNEL
*DREDGING	\$ 112,000	\$ 137,000	\$ 164,000	\$ 1,012,000	\$ 437,000
CONTINGENCIES (20%)	23,000	27,000	33,000	202,000	87,000
ENGINEERING AND DESIGN	17,000	19,000	19,000	24,000	22,000
SUPERVISION AND ADMIN.	20,000	27,000	29,000	101,000	59,000
TOTAL FIRST COST	\$ 172,000	\$ 210,000	\$ 245,000	\$ 1,339,000	\$ 605,000
CONSTRUCTION PERIOD (MONTHS)	1	1	1	3	1.5
INTEREST DURING CONSTRUCTION	0	0	0	10,000	1,000
NAVIGATION AIDS	0	8,000	8,000	0	0
TOTAL INVESTMENT	\$ 172,000	\$ 218,000	\$ 253,000	\$ 1,349,000	\$ 606,000
ANNUAL CHARGES					
INTEREST AND AMORTIZATION (8 7/8% FOR 50 YEARS)	\$ 15,500	\$ 19,600	\$ 22,800	\$ 121,500	\$ 54,600
MAINTENANCE DREDGING	4,300	5,300	6,100	33,500	15,100
MAINTENANCE OF NAVIGATION AIDS	0	1,000	1,000	0	0
ANNUAL CHARGES	\$ 19,800	\$ 25,900	\$ 29,900	\$ 155,000	\$ 69,700

\*INCLUDES MOBILIZATION AND DEMOBILIZATION  
SEE APPENDIX 2 FOR MORE DETAILED COST ESTIMATE

in Appendix 2. Annual amortization charges were computed at a rate of 8 7/8 percent over a 50-year project life.

Due to the strong flushing action in the lower pond, sedimentation has not been a problem in the past. The proposed improvements are not anticipated to increase the frequency of maintenance operations. Based on maintenance records, a 2.5 percent shoaling rate has been incorporated into the annual cost of the alternatives.

#### 4.2 Project Benefits

The five plans provide varying degrees of commercial benefits to commercial boating interests as shown in the breakdown of annual project benefits provided in Table 3.

Commercial benefits for the three Galilee plans (A, B; A & B) were derived from reductions in tidal delays and grounding damages to the fishing fleet. Tidal delay savings are measured in reduced fuel and labor costs. Benefits for the Jerusalem plan were derived from an elimination of delays in reaching the High Point repair facilities and the additional travel costs incurred by going elsewhere for repairs. A detailed discussion is provided in Appendix 3.

#### 4.3 Comparison Summary

A summary of project benefits compared to project costs for the alternative plans is shown in Table 4.

TABLE 3  
POINT JUDITH POND, RHODE ISLAND  
ANNUAL BENEFITS OF DETAILED PLANS

COMMERCIAL BENEFITS	PLAN C JERUSALEM CHANNEL				
	PLAN A WEST BULKHEAD WIDENING ALONE	PLAN B NORTH BASIN EXTENSION ALONE	PLANS A & B COMBINED	PLAN C1 15-FOOT CHANNEL	PLAN C2 12-FOOT CHANNEL
FISHING FLEET					
- REDUCTION IN DELAYS	\$ 47,900	\$ 49,200	\$ 97,100	\$ 2,600	\$ 2,600
- GROUND DAMAGES PREVENTED	\$ 60,600	\$ 21,100	\$ 81,700	0	0
- ELIMINATION OF TRAVEL COSTS TO ALTERNATE REPAIR FACILITIES	0	0	0	\$ 20,100	\$ 15,900
TOTAL ALL BENEFITS	\$108,500	\$ 70,300	\$178,800	\$ 22,700	\$ 18,500



TABLE 4  
POINT JUDITH POND, RHODE ISLAND  
ECONOMIC IMPACTS

	PLAN C JERUSALEM CHANNEL				
	PLAN A WEST BULKHEAD WIDENING ALONE	PLAN B NORTH BASIN EXTENSION ALONE	PLANS A & B COMBINED	PLAN C1 15-FOOT CHANNEL	PLAN C2 12-FOOT CHANNEL
ANNUAL BENEFITS	\$108,500	\$ 70,300	\$178,800	\$ 22,700	\$ 18,500
ANNUAL COSTS	\$ 19,800	\$ 25,900	\$ 29,900	\$155,000	\$ 69,700
NET BENEFITS	\$ 88,700	\$ 44,400	\$148,900	0	0
BENEFITS TO COSTS RATIO	5.5	2.7	6.0	0.2	0.3

## 5.0 ASSESSMENT AND EVALUATION OF DETAILED PLANS

This section analyzes the five improvement alternatives selected for detailed study. Evaluation of the alternatives was based on their impacts on the environment, existing navigation, and social and cultural resources of the study area. The economic costs and benefits of project implementation have also been analyzed. Table 1 provides a comparison of the different features of the five basic alternatives.

### 5.1 Dredging Impacts

Dredging operations would result in the removal of some subtidal benthic habitat and temporary increases in turbidity. The loss of some non-motile benthic organisms from the project area during dredging is unavoidable, however, the area would likely be recolonized by similar species within a matter of months. Motile species such as lobsters, crabs and finfish should be able to avoid the area during dredging operations and are likely to return after the dredging is finished. Allowing dredging only during the periods from April 1 through May 30 and August 30 through November 15 would minimize impacts to fish and shellfish spawning. Dredging operations would avoid eelgrass beds in the area. Temporary increases in turbidity would have only minimal effects on the eelgrass community.

Sediments in the North Basin are finer than those in the West Bulkhead and Jerusalem channels and therefore have a greater turbidity generating potential. The small size of the project and use of the hydraulic dredge however, minimizes the potential for turbidity impacts. Deepening and widening the North Basin has the potential to increase tidal flushing in the area of Bluff Hill Cove. The Jerusalem and West Bulkhead plans should not effect the current hydrodynamics of these areas. Additional information on the impacts of construction at the dredge sites is contained in the Environmental Assessment in Appendix 1.

### 5.2 Disposal Impacts

Disposal under the Galilee plans consists of pumping the hydraulically dredged material to an upland dewatering site. The dewatering containment area is located approximately 1500 feet from the construction area along the Escape Road in Galilee. The containment area has been used for previous dredging work done by the state of Rhode Island. The containment facility currently holds material dredged from the Pond in conjunction with the state's improvement work at Galilee. However, the state has indicated the material would be removed and the site made available for the Corp's use. Whether or not the Corp's project is implemented, the material would be removed from the disposal site and therefore its removal is not considered part of the project cost. The containment site is capable of holding 26,000 cubic yards of material; sufficient to meet the needs of the two Galilee plans. Once placed in the containment area and sufficiently dewatered, the material, which has been found to be environmentally acceptable, would become the state of Rhode Island's responsibility; most likely to be removed for upland disposal at their discretion.

Material dredged from the Jerusalem Plan C would be hydraulically dredged and pumped through a pipeline to its disposal area at East Matunuck State Beach. The large volume of material and the proximity of the beach make beach nourishment at this site the logical and most efficient choice for disposal. The material to be dredged is sandy material and would be used in the state's beach nourishment plans.

More information on the impacts of the disposal sites is contained in the Environmental Assessment in Appendix 1.

### 5.3 Economic Impacts

Economic impacts of the alternative plans were evaluated by determining costs and benefits. The cost estimates, listed in Table 2 and described fully in Appendix 2, are based on several factors including: the quantity and type of dredged material, mobilization and demobilization costs, equipment costs, project design (engineering and supervision) and administrative costs and contingencies. Charges for interest during construction (IDC) are based on varying construction durations and are computed for the purpose of comparing benefits to costs. IDC charges are not included in the cost apportionment.

For the purpose of determining the benefit to cost ratio, costs have been calculated to an annual cost over a 50-year amortization period using an interest rate of 8 7/8 percent.

The benefits of the proposed plans of improvement, as described in detail in Appendix 3, have been based on the following assumptions:

- o Elimination of tidal delays would result in decreased labor and fuel costs for harvest of the existing catch.
- o Increasing the channel depth and length would reduce grounding damage and provide access to existing as well as new facilities built by the state and local interests.
- o The benefits to the existing commercial fleet would occur immediately following the implementation of these improvements.
- o Improvements will not effect harvest rates or prices for the commercial fish market. Benefits result from a reduction in harvesting costs for the existing level of catch.

## 6.0 SELECTION OF A PLAN

### 6.1 The Selected Plan

The selected plan for navigation improvements at Point Judith Pond, Rhode Island, has been based on consideration of economic efficiency, minimization of environmental impacts, navigational safety and the needs of state government and local parties. Based on these criteria, Plans A & B combined results in the greatest net benefits, and is therefore the NED plan. This plan provides the most favorable improvement method for meeting the project objective of reducing navigation hazards and delays. The plan also complements the state of Rhode Island's improvement work in Galilee. As shown in Figure 6, the combined plan would consist of widening the existing 15-foot deep West Bulkhead channel by 50 feet and then extending this same channel into the North Basin area at a width of 150 feet and a depth of 10 feet.

The selected plan would require the removal of 22,400 cubic yards of material. The material would be dredged by use of a hydraulic dredge and pumped through a pipeline to a state operated dewatering containment facility in Galilee.

The first cost of construction for the selected plan is estimated to be \$245,000. Navigation aids costing \$8,000 will bring the total cost to \$253,000. Annual benefits total \$178,800 for commercial interests. These benefits, when compared to a 50-year amortized annual cost of \$29,900, yield a benefit-cost ratio of 6.0.

The selected plan is not anticipated to increase maintenance dredging frequency. This is due to the strong tidal flushing of the lower pond and as a result, minimal amount of maintenance dredging needed to be done over past years. Therefore, a 2.5 percent shoaling rate was used in determining annual costs.

### 6.2 Implementation Responsibilities

#### 6.2.1 Cost Apportionment

The Federal and non-Federal sharing responsibilities for the first cost of construction, as stipulated in the Water Resources Development Act of 1986 (Public Law 99-662), requires that the local sponsor contribute at least 20% (\$49,000) of the first cost of construction. At least 10% (\$24,500) of the first cost is to be paid during the construction period, and the other 10% (\$24,500) may be paid over a period up to 30 years. The remaining share (80%) of the first cost, \$196,000, is the Federal contribution.

#### 6.2.2 Federal Responsibilities

The Federal responsibilities include preparation of plans and specifications and contract advertisement, award and supervision. Federal responsibility also only includes the dredging and maintenance of the designated Federal channels, and does not include any berthing facilities, shoreline protection or site work at upland disposal areas.

The Federal responsibility for the operation and maintenance of the Project shall cease when the Federal expenditures for this responsibility have reached the greater of \$4,500,000 or 125% of the Federal share of the construction cost of the general navigation features of the Project, both discounted on a present worth basis starting with the date the sponsor accepts the project.

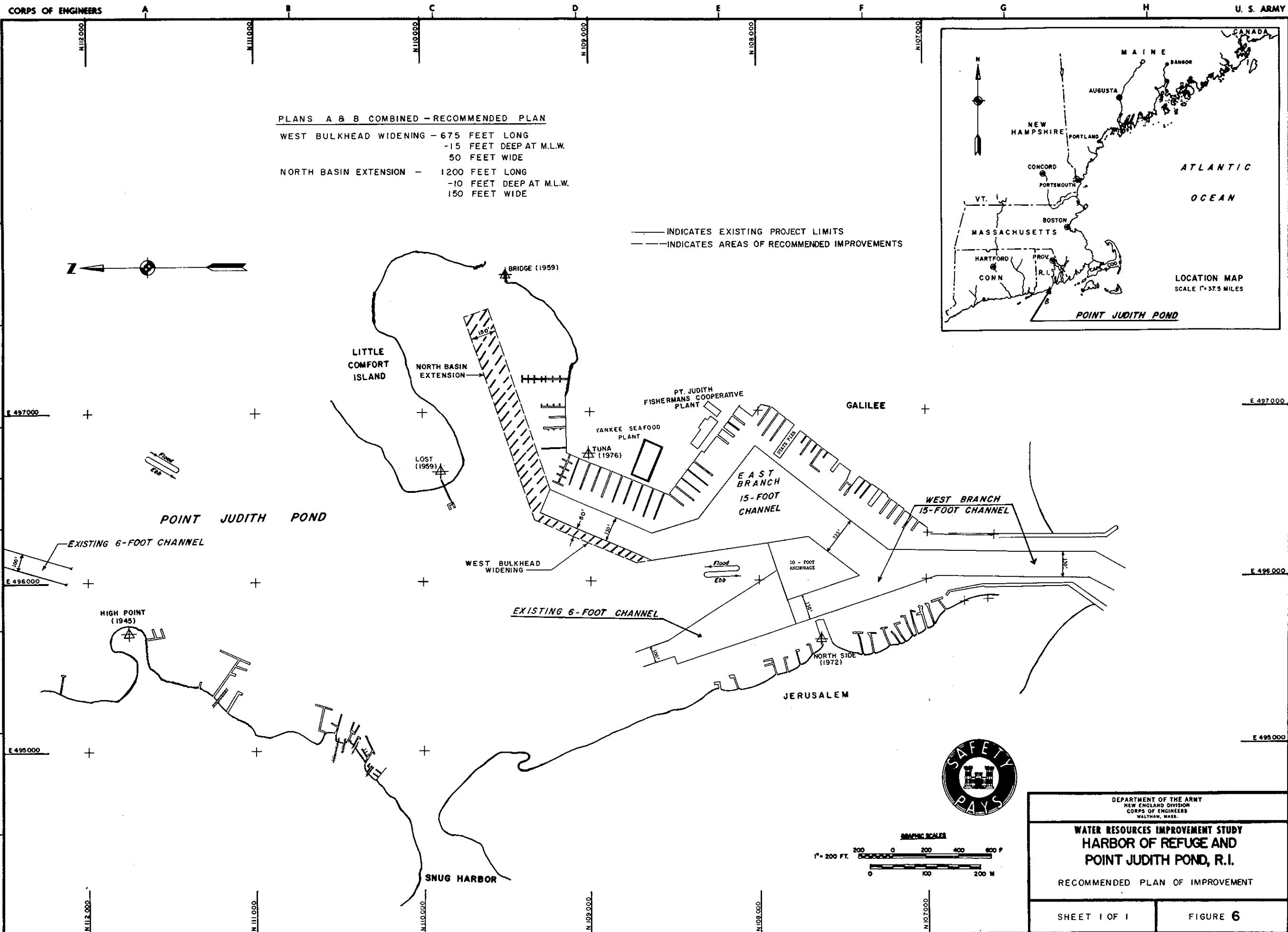
#### 6.2.3 Non-Federal Responsibilities

The following is a list of items of local cooperation required for projects authorized under Section 107. The local sponsor must provide assurance that they intend to meet these items prior to project authorization.

- o Assume full responsibility for all non-Federal costs associated with the project. Current law requires that the non-Federal sponsor provide at least 20% of the first cost of construction of General Navigation facilities not exceeding 20 feet in depth.
- o Provide, maintain and operate without cost to the United States, an adequate public landing with provisions for the sale of motor fuel, lubricants and potable water, open and available to use for all on an equal basis.
- o Provide without cost to the United States, all necessary lands, easements and rights of way necessary for project construction including dredged material disposal areas and subsequent maintenance.
- o Hold and save the United States free from damages that may result from construction and maintenance of the project.
- o Provide and maintain mooring facilities as needed for transient and local vessels as well as necessary access roads, parking areas and other needed public use shore facilities open and available to all on an equal basis as defined in the Local Cooperation Agreement. Only minimum basic facilities and services are required as part of the project. The actual scope or extent of facilities and services provided over and above the required minimum is a matter of local decision. The manner of financing such facilities and services is a local responsibility.
- o Assume full responsibility for all project costs in excess of the Federal cost limitation of \$4,000,000. The Federal cost limitation includes prior construction costs and all investigations, planning, engineering, supervision, inspection, and administration involved in the development and construction of the project. The total Federal expenditures for this project are \$610,000.

#### 6.3 Conclusions

The New England Division, Corps of Engineers, has reviewed and evaluated all pertinent data concerning the proposed plan for improving navigation at Point Judith Pond. The Corps has also reviewed and evaluated the stated views of interested agencies and concerned public regarding the alternative plans. The possible consequences of each alternative have been



evaluated on the basis of engineering feasibility, environmental impact and economic efficiency.

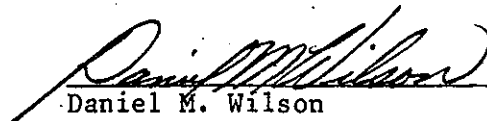
We find substantial benefits are to be derived by providing the commercial fishermen with reliable and improved access to the facilities and berthing areas in Point Judith Pond. Although the proposed improvement would cause a minor disruption of the environment during dredging operations, it is not considered significant. On that basis an environmental assessment has been prepared. Due to the significant benefits attributable to the commercial fishing industry, any effects are considered to be offset by the improvement and the resulting overall economic growth of the region.

The recommended plan, Plans A & B combined, would result in the greatest economic net benefits and is therefore the NED Plan. This Plan would widen the existing 15-foot deep West Bulkhead channel by 50 feet and then extend this same channel into the North Basin area at a width of 150 feet and a depth of 10 feet. Disposal of the dredged material would be at a state operated dewatering facility, adjacent to the construction site, in Galilee. Once sufficiently dewatered, the dredged material would be disposed of by the state of Rhode Island at upland sites of their choosing.

## 7.0 RECOMMENDATION

I recommend that the existing Federal navigation project at Point Judith Pond, Port of Galilee, Narragansett, Rhode Island, under the authority of Section 107 of the River and Harbor Act of 1960, as amended, be modified in accordance with the Plan selected herein, with such further modifications thereto as in the discretion of the Chief of Engineers may be advisable.

The recommendations contained herein reflect the information available at this time and current Departmental policies governing formulation of individual projects. They do not reflect program and budgeting priorities inherent in the formulation of a national Civil Works construction program nor the perspective of higher review levels within the Executive Branch. Consequently, the recommendations may be modified before they are authorized for implementation funding.

  
Daniel M. Wilson  
Colonel, Corps of Engineers  
Division Engineer



#### ACKNOWLEDGEMENT AND IDENTIFICATION OF PERSONNEL

This report was prepared under the supervision and management of the following New England Division personnel:

Colonel Daniel M. Wilson, Division Engineer  
Joseph L. Ignazio, Chief, Planning Division  
Nicholas E. Avtges, Chief, Plan Formulation Branch  
John T. Smith, Chief, Coastal Development Section

The study report was developed and prepared by Christopher L. Hatfield, Project Manager. The environmental assessment was prepared by Terrence Fleming. The cost estimates were prepared by Robert Simeone, Engineering Division. The economic assessment was prepared by Rich Ring.

The New England Division is appreciative of the cooperation and assistance rendered in connection with this study by personnel of other Federal offices and agencies, by state and municipal authorities particularly the Rhode Island Department of Environmental Management.

DRAFT LOCAL COOPERATION AGREEMENT  
BETWEEN  
THE DEPARTMENT OF THE ARMY  
AND  
THE STATE OF RHODE ISLAND  
FOR CONSTRUCTION OF THE  
POINT JUDITH POND, PORT OF GALILEE,  
NAVIGATION IMPROVEMENT PROJECT  
NARRAGANSETT, RHODE ISLAND

THIS AGREEMENT, entered into this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_, by and between the DEPARTMENT OF THE ARMY (hereinafter referred to as the "Government"), acting by and through the Commander, USAED New England Division, and the State of Rhode Island (hereinafter referred to as "[the local sponsor]"), acting by and through its Department of Environmental Management,

WITNESSETH, THAT:

WHEREAS, the authority for the construction of the navigation project at Point Judith Pond, Narragansett, Rhode Island (hereafter called the "Project") not specifically authorized by Congress is contained in Section 107 of the River and Harbor Act of 1960, approved July 14, 1960 (PL 86-645), as amended; and,

WHEREAS, construction of the Project is described in a report entitled Point Judith Pond, Port of Galilee, Narragansett, Rhode Island, prepared by the Division Engineer, US Army Engineer Division, New England, dated \_\_\_\_\_, and approved by the Chief of Engineers on \_\_\_\_\_; and

WHEREAS, the Water Resources Development Act of 1986, Public Law 99-662, specifies the cost-sharing requirements applicable to the Project; and

WHEREAS, the local sponsor has the authority and capability to furnish the cooperation hereinafter set forth and is willing to participate in project cost-sharing and financing in accordance with the terms of this Agreement;

NOW, THEREFORE, the parties agree as follows:

#### ARTICLE I - DEFINITIONS

For purposes of this Agreement:

1. The term "general navigation features of the project" shall mean the following project features assigned to commercial navigation: widening the existing 15-foot deep East Branch channel, opposite the West Bulkhead, by 50 feet, and extending a 150-foot wide channel into the North Basin area that is 10 feet deep at mean low water (MLW).

2. The term "total cost of construction of general navigation facilities assigned to commercial navigation" shall mean all costs incurred by the local sponsor and the Government directly related to construction of the general navigation features of the project. Such costs shall include, but not necessarily be limited to, actual construction costs, costs of preparation of contract plans and specifications, costs of relocations not performed by or on behalf of the local sponsor, costs of applicable engineering and design, supervision and administration costs, and costs of contract dispute settlements or awards, but shall not include the value of lands, easements, rights-of-way, and dredged material disposal areas, relocations performed by or on behalf of the local sponsor, non-Federal dredging of public or private channels and berthing areas, aids to navigation, nor Government costs for preauthorization studies.

3. The term "period of construction" shall mean the time from the advertisement of the first construction contract to the time of acceptance of the general navigation features of the project by the Contracting Officer.

4. The term "Contracting Officer" shall mean the Commander of the U.S. Army Engineer Division, New England, or his designee.

5. The term "highway" shall mean any highway, thoroughfare, roadway, street, or other public road or way.

#### ARTICLE II - OBLIGATIONS OF PARTIES

a. The Government, subject to and using funds provided by the local sponsor and appropriated by the Congress, shall expeditiously construct the general navigation features of the project (including relocations or alterations of highway and railroad bridges), applying those procedures usually followed or applied in Federal projects, pursuant to Federal laws, regulations, and policies. The local sponsor shall be afforded the opportunity to review and comment on all contracts, including relevant plans and specifications, prior to the issuance of invitations for bids. The local sponsor also shall be afforded the opportunity to review and comment on all modifications and change orders prior to the issuance to the contractor of a Notice to Proceed. The Government will consider the views of the sponsor, but award of the contracts and performance of the work thereunder shall be exclusively within the control of the Government.

b. The Government shall operate and maintain the general navigation features of the project until the limit on Government participation, as set forth in paragraph i. of this Article, is reached.

c. The local sponsor shall provide and maintain, at its own expense, all project facilities other than those for general navigation, including dredged depths commensurate with those in related general navigation features in berthing areas and local access channels serving the general navigation features.

d. As further specified in Article III hereof, the local sponsor shall provide to the Government all lands, easements, and rights-of-way, including dredged material disposal areas, and perform all relocations or alterations of facilities other than utilities governed by paragraph e. below (except relocations or alterations of highway and railroad bridges), determined by the Government to be necessary for construction, operation, or maintenance of the project.

e. As further specified in Article III hereof, the local sponsor shall perform or assure performance of all utility relocations or alterations determined by the Government to be necessary for construction, operation, or maintenance of the project.

f. As further specified in Article VI hereof, the local sponsor shall provide, during the period of construction, a cash contribution equal to the following percentages of the total cost of construction of the general navigation facilities assigned to commercial navigation:

l. 10 percent of the costs attributable to the portion of the project which has a depth not in excess of 20 feet;

g. As further specified in Article VI hereof, the local sponsor shall repay with interest, over a period not to exceed 30 years following completion of the project or separable element thereof, an additional 10 percent of the total cost of construction of general navigation facilities assigned to commercial navigation, depending on the value, as calculated under Article IV hereof, of items provided pursuant to paragraph d. of this Article. If the credit allowed for such items is less than 10 percent of the total cost of construction of general navigation facilities, the local sponsor shall repay a percentage of said total cost equal to the difference between 10 percent of the total cost and the percentage of the total cost represented by the value of such items. If the credit allowed is equal to or greater than 10 percent of said total cost, the local sponsor shall not be required to repay any additional percentage of the total cost.

h. The local sponsor shall pay all project costs in excess of the Federal statutory cost limitation of \$4,000,000. In no instance shall the Government's share of project costs, including preauthorization planning costs (reconnaissance studies, feasibility studies, etc.) exceed this limitation.

i. The Government's responsibility for operation and maintenance of the Project shall cease when the Government's expenditures for this responsibility have reached the greater of \$4,500,000 less the Government's share of the construction costs of the general navigation features of the Project, or 125 percent of the Government's share of the construction costs of the general navigation features of the Project, both discounted on a present worth basis starting with the date the sponsor accepts the Project. The discount rate to be used in determining the value of future operation and maintenance expenditures will be the rate applicable to the evaluation of Federal water resource projects in the 19\_\_ Federal Fiscal Year, \_\_\_\_ percent. In view of the non-Federal participation in the operation and maintenance of the Project, it is understood and agreed that the parties hereto will consult on necessity and frequency of maintenance. The Government, however, shall make the final decision on when maintenance shall occur during the period of Federal participation. When Federal participation ceases, the operation and maintenance of the Project becomes the responsibility of the local sponsor. The average annual cost for operation and maintenance of the Project is presently estimated to be \$ 6,100, of which the Government's share is presently estimated to be \$ 6,100.

j. No Federal funds may be used to meet the local sponsor's share of project costs under this Agreement unless the expenditure of such funds is expressly authorized by statute as verified in writing by the granting agency.

### ARTICLE III - LANDS, FACILITIES, AND RELOCATION ASSISTANCE

a. Prior to the advertisement of any construction contract, the local sponsor shall furnish to the Government all lands, easements, and rights-of-way, including suitable borrow and dredged material disposal areas, as may be determined by the Government to be necessary for construction, operation, and maintenance of the general navigation features, and shall furnish to the Government evidence supporting the local sponsor's legal authority to grant rights-of-entry to such lands.

b. The local sponsor shall provide or pay to the Government the full cost of providing all retaining dikes, wasteweirs, bulkheads, and embankments, including all monitoring features and stilling basins, determined by the Government to be necessary for construction, operation, or maintenance of the general navigation features.

c. Upon notification from the Government, the local sponsor shall accomplish all necessary alterations and relocations of buildings, highways, railroads, storm drains, and other facilities, structures, and improvements.

d. Upon notification from the Government, the local sponsor shall perform or assure performance of all necessary alterations and relocations of pipelines, cables, and other utilities. Except for projects authorized to be constructed to depths in excess of 45 feet, nothing herein shall be deemed to affect the ability of the local sponsor to seek compensation from other non-Federal entities for costs it incurs under this paragraph. For projects authorized to be constructed to depths in excess of 45 feet, the cost of necessary alterations or relocations shall be shared equally between the local sponsor and the owner of the affected utility.

e. The local sponsor shall comply with the applicable provisions of the Uniform Relocations Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, approved January 2, 1971, in acquiring lands, easements, and rights-of-way for construction and subsequent operation and maintenance of the project, and inform all affected persons of applicable benefits, policies, and procedures in connection with said Act.

#### ARTICLE IV - VALUE OF LANDS AND FACILITIES

a. The value of the lands, easements, and rights-of-way to be credited toward the additional 10 percent of total costs the local sponsor must repay pursuant to Article II.g. will be determined in accordance with the following procedures:

1. If the lands, easements, or rights-of-way are owned by the sponsor as of the date this Agreement is signed, the credit shall be the fair market value of the interest at the time such interest is made available to the Government for construction of the Project. The fair market value shall be determined by an Appraisal, to be obtained by the sponsor, which has been prepared by an independent and qualified appraiser who is acceptable to both the sponsor and the Government. The appraisal shall be reviewed and approved by the Government.

2. If the lands, easements, or rights-of-way are to be acquired by the sponsor after the date this Agreement is signed, the credit shall be the fair market value of the interest at the time such interest is made available to the Government for construction of the project. The fair market value shall be determined as specified in subparagraph 1. above. If the sponsor pays an amount in excess of the appraised fair market value, it may be entitled to a credit for the excess if the sponsor has secured prior written approval from the Government of its offer to purchase such interest.

3. If the sponsor acquires more lands, easements, or rights-of-way than are necessary for project purposes, as determined by the Government, then only the value of such portions of those acquisitions as are necessary for project purposes shall be credited to the sponsor's share.

4. Credit for lands, easements, and rights-of-way in the case of involuntary acquisitions made within one year preceding the date this Agreement is signed or any time after the date this Agreement is signed will be based on court awards, or on stipulated settlements that have received prior Government approval.

5. For lands, easements, or rights-of-way acquired by the local sponsor within a five-year period preceding the date this agreement is signed, or any time after this agreement is signed, credits provided under this Article will also include the actual incidental costs of acquiring the interest, e.g., closing and title costs, appraisal costs, survey costs, attorney's fees, plot maps, and mapping costs, as well as the actual amounts expended for any relocation assistance provided in accordance with the obligations under this Agreement.

b. The costs of relocations or modifications of facilities (other than utilities) that will be credited towards the additional 10 percent of total costs the sponsor must repay pursuant to Article II.g. will be that portion of the actual costs incurred by the sponsor as set forth below:

1. Highways: Only that portion of the cost as would be necessary to construct substitute highways to the design standard that the State of Rhode Island would use in constructing a new highway under similar conditions of geography and traffic loads.

2. Facilities (Other than utilities): Actual relocation costs, less depreciation, less salvage value, plus the cost of removal, less the cost of betterments. With respect to betterments, new materials shall not be used in any relocation or alteration if materials of value and usability equal to those in the existing facility are available or can be obtained as salvage from the existing facility or otherwise unless the provision of new material is more economical. If, despite the availability of used material, new material is used, where the use of such new material represents an additional cost, such cost will not be credited to the sponsor's share.

c. No credit shall be given for any costs relating to relocations or alterations of utilities.

#### ARTICLE V - CONSTRUCTION PHASING AND MANAGEMENT

a. To provide for consistent and effective communication between the local sponsor and the Government during the term of construction the local sponsor and the Government shall appoint representatives to coordinate on scheduling, plans, specifications, modifications, contract costs, and other matters relating to construction of the project.

b. The representatives appointed above shall meet as necessary during the term of project construction and shall make such recommendations as they deem warranted to the Contracting Officer.

c. The Contracting Officer shall consider the recommendations of the representatives in all matters relating to the project, but the Contracting Officer, having ultimate responsibility for construction of the project, has complete discretion to accept, reject, or modify the recommendations of the representatives.



## ARTICE VI - METHOD OF PAYMENT

a. The local sponsor shall provide, over the term of construction, the percentages of the total cost of construction of general navigation facilities assigned to commercial navigation specified in Article II.f. hereof. Such cost is presently estimated to be \$245,000. In order to meet its share, the local sponsor must provide an initial cash contribution presently estimated to be \$24,500.

b. The initial cash contribution shall be provided as follows: 30 days prior to the award of the first construction contract, the Government shall notify the sponsor of its estimated share of project costs. Within 15 days thereafter, the sponsor shall provide the Government the full amount of the required contribution by delivering a check payable to "FAO, USAED, NEW ENGLAND DIVISION " to the Contracting Officer representing the Government. In the event that the total cost of construction of general navigation facilities assigned to commercial navigation is expected to exceed the estimate given at the outset of construction, the Government shall immediately notify the local sponsor of the additional contribution it will be required to make meet its share of the revised estimate. Within 15 days thereafter, the local sponsor shall provide the Government the full amount of the additional required contribution.

c. The Government will draw on the funds, provided by the local sponsor such sums as it deems necessary to cover contractual and in-house fiscal obligations attributable to the project as they are incurred, as well as project costs incurred by the Government prior to the initiation of construction.

d. Upon completion of the general navigation features and resolution of all relevant contract claims and appeals, the Government shall compute the total cost of construction of general navigation facilities assigned to commercial navigation and tender to the local sponsor a final accounting of its share of project costs. In the event the total contribution by the local sponsor is less than its initial required share of project costs at the time of the final accounting, the local sponsor shall, within 90 calendar days after receipt of written notice, make a cash payment to the Government of whatever sum is required to meet its initial required share of project costs. In the event the local sponsor has made excess cash contributions which result in the local sponsor's having provided more than its initial required share of project costs, the Government shall credit the excess to the additional amount the local sponsor must repay pursuant to Articlef II.g. and II.h. of this Agreement.

e. The local sponsor shall repay the additional amount required pursuant to Article II.g. of this Agreement, reduced by any excess cash contribution made during the term of construction, in equal annual installments over a period of [not more than 30] years from the date the final accounting is tendered by the Government. Such repayment shall include interest at a rate determined by the Secretary of the Treasury, taking into consideration the average market yields on outstanding marketable obligations of the United States with remaining periods to maturity comparable to the repayment period, during the month preceding the fiscal year in which costs for the construction of the project are first incurred [or, in the case of recalculation, the fiscal year in which the recalculation is made], plus a premium of one-eighth of one percentage point for transaction costs. The interest rate shall be recalculated by the Secretary of the Treasury at five-year intervals. Nothing herein shall preclude the local sponsor from repaying this additional amount in full upon receipt of the final accounting. Should this full repayment be made within 90 days from receipt of the final accounting, there shall be no charges for interest or transaction costs.

#### ARTICLE VII - DISPUTES

Before any party to this Agreement may bring suit in any court concerning an issue relating to this Agreement, such party must first seek in good faith to resolve the issue through negotiation or other forms of nonbinding alternative dispute resolution mutually acceptable to the parties.

#### ARTICLE VIII - OPERATION AND MAINTENANCE

a. The local sponsor shall operate and maintain all portions of the project, except for general navigation features and aids to navigation, in accordance with regulations or directions prescribed by the Government.

b. The Government shall operate and maintain the general navigation features of the project as limited in Article II.i.

c. The local sponsor hereby gives the Government a right to enter, at reasonable times and in a reasonable manner, upon land which it owns or controls for access to the Project for the purpose of inspection, and, if necessary, for the purpose of completing, operating, repairing, and maintaining the project. If an inspection shows that the local sponsor for any reason is failing to fulfill its obligations under this Agreement without receiving prior written approval from the Government, the Government will send a written notice to the local sponsor. If the local sponsor persists in such failure for 30 calendar days after receipt of the notice, then the Government shall have a right to enter, at reasonable times and in a reasonable manner, upon lands the local sponsor owns or controls for access to the project for the purpose of completing, operating, repairing, or maintaining those portions of the project for which the sponsor is responsible under this Agreement. No completion, operation, repair, or maintenance by the Government shall operate to relieve the local sponsor of responsibility to meet its obligations as set forth in this Agreement, or to preclude the Government from pursuing any other remedy at law or equity to assure faithful performance pursuant to this Agreement.

#### ARTICLE IX - RELEASE OF CLAIMS

The local sponsor shall hold and save the Government free from all damages arising from the construction, operation, and maintenance of the project, except for damages due to the fault or negligence of the Government or its contractors.

#### ARTICLE X - MAINTENANCE OF RECORDS

The Government and the local sponsor shall keep books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to this Agreement to the extent and in such detail as will properly reflect total project costs. The Government and the local sponsor shall maintain such books, records, documents, and other evidence for a minimum of three years after completion of construction of the project and resolution of all claims arising therefrom, and shall make available at their offices at reasonable times, such books, records, documents, and other evidence for inspection and audit by authorized representatives of the parties to this Agreement.

#### ARTICLE XI - FEDERAL AND STATE LAWS

In acting under its rights and obligations hereunder, the local sponsor agrees to comply with all applicable Federal and state laws and regulations, including section 601 of Title VI of the Civil Rights Act of 1964 (Public Law 88-352) and Department of Defense Directive 5500.II issued pursuant thereto and published in Part 300 of Title 32, Code of Federal Regulations, as well as Army Regulation 600-7, entitled "Nondiscrimination on the Basis of Handicap in Programs and Activities Assisted or Conducted by the Department of the Army."

#### ARTICLE XII - RELATIONSHIP OF PARTIES

The parties to this Agreement act in an independent capacity in the performance of their respective functions under this Agreement, and neither party is to be considered the officer, agent, or employee of the other.

#### ARTICLE XIII - OFFICIALS NOT TO BENEFIT

No member of or delegate to the Congress, or resident commissioner, shall be admitted to any share or part of this Agreement, or to any benefit that may arise therefrom.

#### ARTICLE XIV - COVENANT AGAINST CONTINGENT FEES

The local sponsor warrants that no person or selling agency has been employed or retained to solicit or secure this Agreement upon agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the local sponsor for the purpose of securing business. For breach or violation of this warranty, the Government shall have the right to annul this Agreement without liability or, in its discretion, to add to the Agreement or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee.

#### ARTICLE XV - TERMINATION OR SUSPENSION

a. If at any time the local sponsor fails to make the payments required under this Agreement, the Secretary of the Army shall terminate or suspend work on the project until the local sponsor is no longer in arrears, unless the Secretary of the Army determines that continuation of work on the project is in the interest of the United States. Any delinquent payment shall be charged interest at a rate, to be determined by the Secretary of the Treasury, equal to 150 per centum of the average bond equivalent rate of the 13-week Treasury bills auctioned immediately prior to the date on which such payment became delinquent, or auctioned immediately prior to the beginning of each additional 3-month period if the period of delinquency exceeds 3 months.

b. If the Government fails to receive annual appropriations in amounts sufficient to meet project expenditures for the then current or upcoming fiscal year, the Government shall so notify the local sponsor. After 60 days either party may elect without penalty to terminate this Agreement or to suspend performance thereunder, and the parties shall conclude their activities relating to the project and proceed to a final accounting in accordance with Article VI.

ARTICLE XVI - NOTICES

a. All notices, requests, demands, and other communications required or permitted to be given under this Agreement shall be deemed to have been duly given if in writing and delivered personally, given by prepaid telegram, or mailed by first-class (postage-prepaid), registered, or certified mail, as follows:

If to the local sponsor:

Mr. Robert L. Bendick  
Department of Environmental Management  
Office of the Director  
9 Hayes Street  
Providence, Rhode Island 02903

If to the Government:

Division Engineer  
New England Division, Corps of Engineers  
424 Trapelo Road  
Waltham, Massachusetts 02254-9149

b. A party may change the address to which such communications are to be directed by giving written notice to the other in the manner provided in this section.

c. Any notice, request, demand, or other communication made pursuant to this Article shall be deemed to have been received by the addressee at such time as it is personally delivered or on the third business day after it is mailed, as the case may be.

ARTICLE XVII - CONFIDENTIALITY

To the extent permitted by the law governing each party, the parties agree to maintain the confidentiality of exchanged information when requested to do so by the providing party.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written.

THE DEPARTMENT OF THE ARMY

STATE OF RHODE ISLAND  
DEPARTMENT OF ENVIRONMENTAL  
MANAGEMENT

BY: \_\_\_\_\_  
Division Commander

BY: \_\_\_\_\_

DATE: \_\_\_\_\_

DATE: \_\_\_\_\_

APPROVED: \_\_\_\_\_  
Governor

CERTIFICATION OF AUTHORITY

I, \_\_\_\_\_, do hereby certify that I am Attorney General of the State of Rhode Island and that I have reviewed the agreement and that the Department of Environmental Management is a legally constituted public body with full authority and legal capability to perform the terms of the agreement between the United States of America and the State of Rhode Island in connection with the Local Cooperation Agreement for the Point Judith Pond, Port of Galilee, Navigation Improvement Project, Narragansett, Rhode Island, and to pay damages, if necessary, in the event of failure to perform in accordance with Section 221 of Public Law 91-611, and that the person who has executed the contract on behalf of the State of Rhode Island has acted within this statutory authority.

IN WITNESS THEREOF, I have made and executed this certificate this \_\_\_\_\_ day of \_\_\_\_\_ 1989.

\_\_\_\_\_  
Attorney General of the  
State of Rhode Island

CERITIFICATION

I, \_\_\_\_\_, do hereby certify that I am Secretary of the State of Rhode Island; \_\_\_\_\_ who signed this agreement on behalf of the State of Rhode Island, was then the Director of the Department of Environmental Management, that said agreement was duly signed for and on behalf of the State of Rhode Island; and that Edward D. DiPrete was Governor of the State of Rhode Island on the date of approval of this agreement; and that \_\_\_\_\_ was Attorney General at the time of his approval.

\_\_\_\_\_  
Secretary of the  
State of Rhode Island

(SEAL)

ENVIRONMENTAL ASSESSMENT  
FINDING OF NO SIGNIFICANT IMPACT  
SECTION 404(b)(1) EVALUATION

PROPOSED IMPROVEMENT DREDGING OF  
POINT JUDITH HARBOR  
NARRAGANSETT AND SOUTH KINGSTON, RHODE ISLAND

Appendix 1

Terrence S. Fleming  
Marine Ecologist  
December 1987

New England Division  
U.S. Army Corps of Engineers  
424 Trapelo Road  
Waltham, Massachusetts 02254-9149



## TABLE OF CONTENTS

### Page No.

I.	Environmental Assessment	
A.	Introduction	EA-1
B.	Purpose and Need	EA-1
1.	Need	EA-1
2.	Authority	EA-4
C.	Proposed Project Description	EA-4
1.	Dredging	EA-4
2.	Disposal	EA-4
D.	Alternatives	EA-5
1.	No Action	EA-5
2.	Modification of Proposed Dredging	EA-5
3.	Modification of Proposed Disposal	EA-5
E.	Affected Environment	EA-6
1.	Dredging Site	EA-6
a.	General	EA-6
b.	Physical and Chemical Environment	EA-6
c.	Biological Environment	EA-8
2.	Disposal Site	EA-16
3.	Threatened and Endangered Species	EA-16
4.	Ecologically Significant Species	EA-17
5.	Historic and Archaeological Resources	EA-17
6.	Social and Economic Resources	EA-17
F.	Environmental Consequences	EA-18
1.	Dredging Site	EA-18
a.	General	EA-18
b.	Physical and Chemical Effects	EA-18
c.	Biological Effects	EA-22
2.	Disposal Site	EA-23
a.	General	EA-23
b.	Physical and Chemical Effects	EA-23
c.	Biological Effects	EA-24
3.	Threatened and Endangered Species	EA-26
4.	Ecologically Significant Species	EA-26
5.	Historic and Archaeological Resources	EA-26
6.	Social and Economic Resources	EA-26
G.	Mitigation	EA-26
H.	Coordination	EA-27
I.	Compliance Table	EA-29
J.	References	EA-32
K.	Correspondence	
II.	404(b)(1) Evaluation	EA-II-1
III.	Findings of No Significant Impact	EA-III-1

### List of Tables

1.	Physical Characteristics of Point Judith Pond	EA-8
2.	Physical Characteristics of Sediment	EA-8
3.	Sediment Chemistry	EA-9
4.	Eelgrass Epifauna	EA-10
5.	Benthic Infauna	EA-11
6.	Elutriate Test Results	EA-21
7.	Elutriate Test - PCB Results, May 1986	EA-21
8.	EP Toxicity Test Results	EA-25

### List of Figures

1.	Existing Federal Project - Location Map	EA-2
2.	Alternative Plan for Improvement	EA-3
3.	Benthic Fauna Stations A and B	EA-12
4.	Benthic Fauna Stations C and D	EA-13
5.	RICZM Coastal Waters and Shoreline Classification	EA-19

## A. Introduction

The project is proposed to improve navigation in Galilee Harbor, Point Judith Pond, Narragansett, Rhode Island. The dredging involves approximately 22,400 cubic yards of silty material. The enlargement of the existing Federal navigation channel will allow for increased commercial development of the harbor.

Galilee Harbor, in the town of Narragansett, Rhode Island, is located at the mouth of Point Judith Pond (see Figure 1). Point Judith Pond extends from Ram Point, Wakefield in the north to the Point Judith Pond entrance channel in the south, a distance of approximately 3.75 miles. At its widest point, it may encompass more than 1.75 miles including tidal flats. The entire pond is tidal, with considerable areas of marsh along its perimeter.

This document is an Environmental Assessment of the proposed navigation improvement project.

## B. Purpose and Need

### 1. Need

Port expansion in Pt. Judith Pond has enlarged the commercial fleet to the point where all the available berthing facilities are utilized to their fullest extent. In order for the fleet to experience continued growth, new areas must be made available for development. Another serious problem is the lack of adequate offloading facilities to handle existing fish catches. This results in delays as vessels are forced to wait up to 48 hours to offload their catch. In addition, because of the narrowness of the West Bulkhead channel, the larger vessels (60 to 95 foot lengths) often go aground as they attempt to maneuver into offloading facilities or berths and around other vessels.

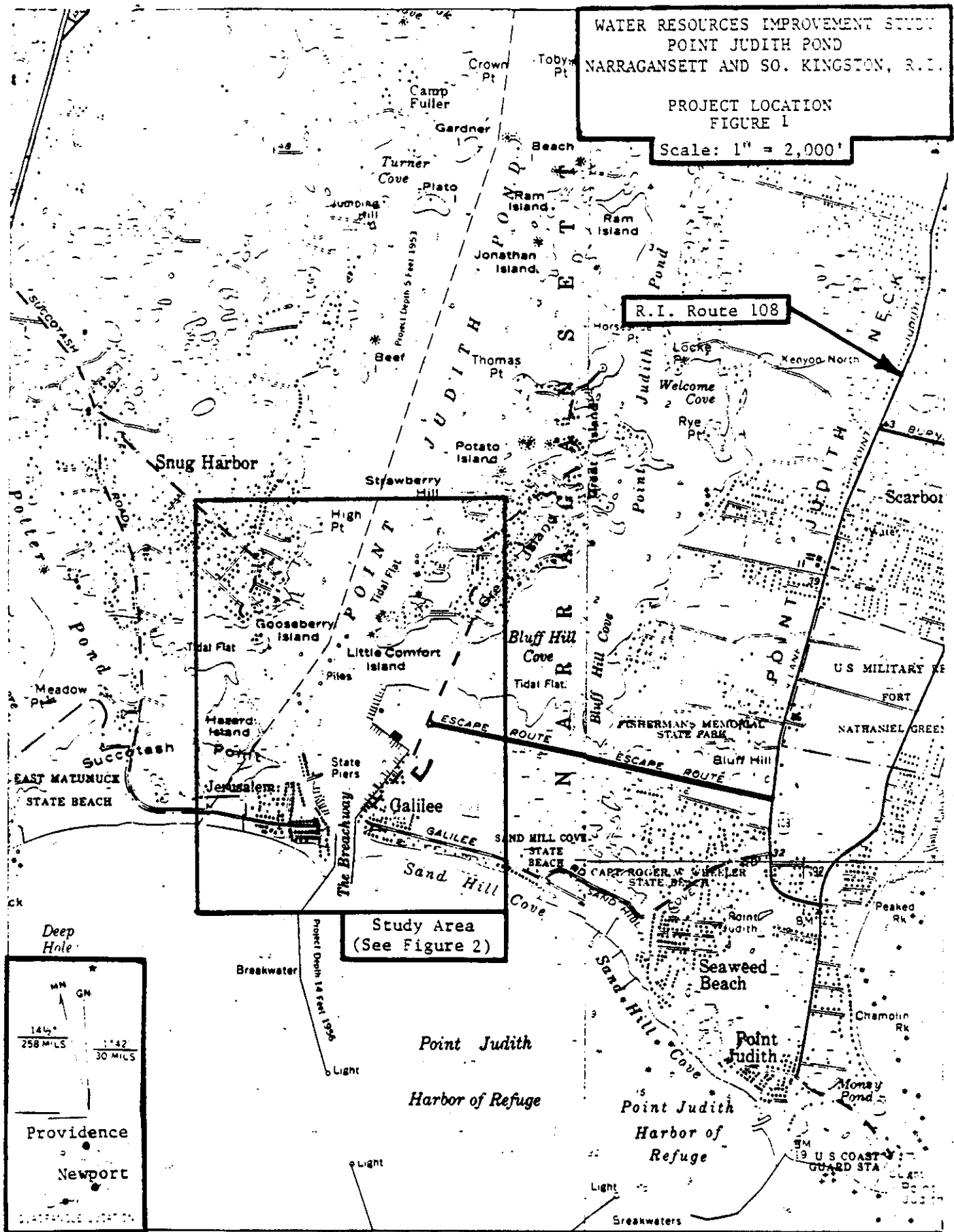
On the Galilee (East) side of the pond, the only remaining area capable of accommodating fleet expansion is the North Basin area. If this area were made available, by dredging and berth construction, then the shallow draft in shore vessels could be relocated to this area, freeing areas along the West Bulkhead for expansion of offloading facilities and making more deep draft berths available for the offshore fleet expansion (see Figure 2).

Once this area has been fully utilized, then future fleet expansion could only be accommodated on the Jerusalem (west) side of the pond. There are plans to construct two heavy duty, deep draft docks north of the State Pier in Jerusalem. There are also existing berthing and marine repair facilities located in Snug Harbor. Although these facilities have been dredged to 12 feet, access is restricted by water depths of 5 feet in the approach channel. This precludes passage of in shore vessels except at high tide and forces deeper draft offshore vessels to seek repairs at other ports.

WATER RESOURCES IMPROVEMENT STUDY  
POINT JUDITH POND  
NARRAGANSETT AND SO. KINGSTON, R.I.

PROJECT LOCATION  
FIGURE 1

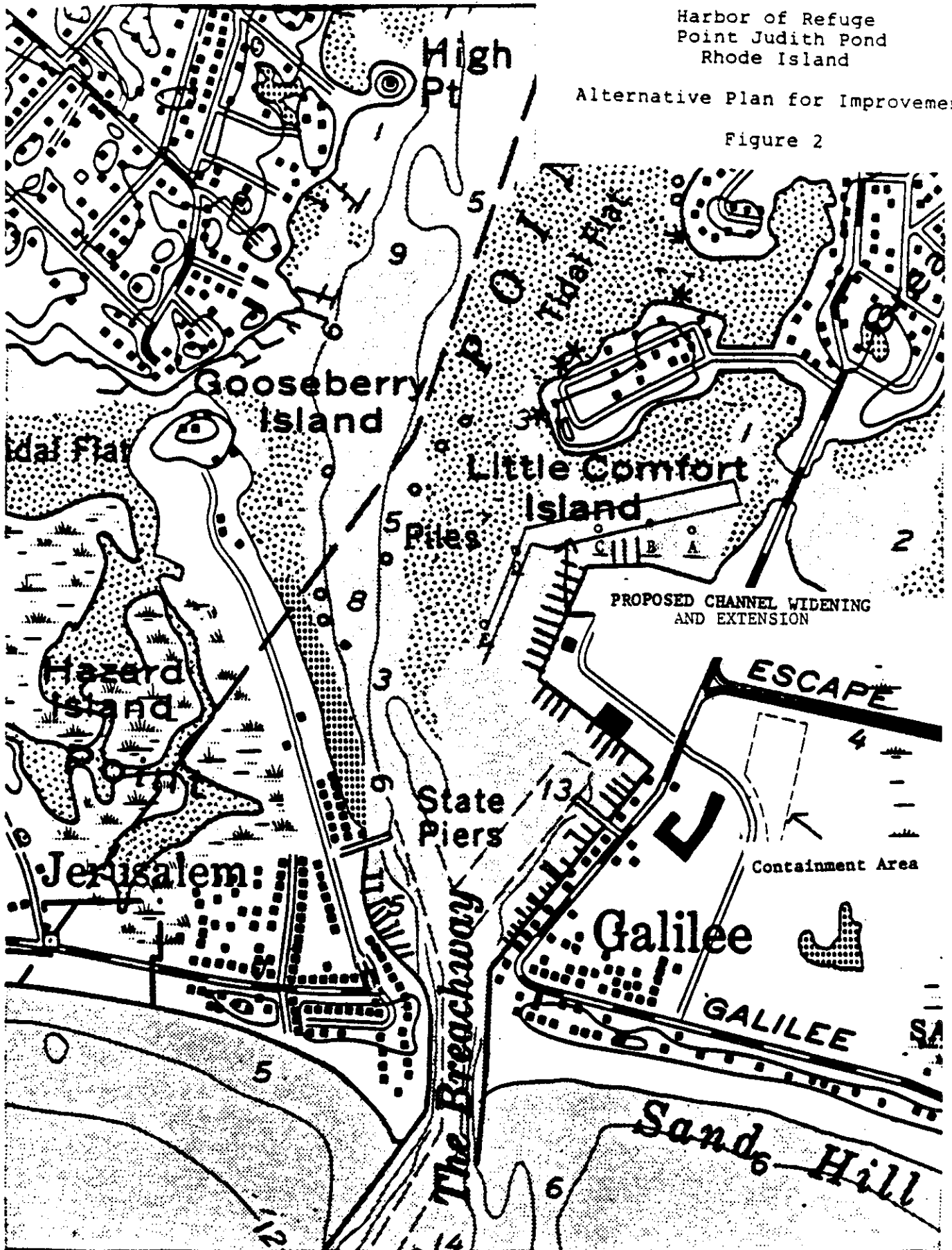
Scale: 1" = 2,000'



Harbor of Refuge  
Point Judith Pond  
Rhode Island

Alternative Plan for Improvement

Figure 2



## 2. Authority

### Project History

A summary of recent major improvements for Point Judith area as follows:

1950-1951	Sand arresting works construction at the entrance to the pond by placing about 9,500 tons of stone.
1956	Maintenance dredging of entrance channel and pond channel.
1959	Maintenance dredging.
1963	Maintenance dredging for removal of 47,000 cubic yards of shoaled material, restored to authorized 15' depth.
1971	Maintenance dredging for removal of 25,000 cubic yards of shoaled material, restored to authorized 15' depth.
1976	Maintenance dredging for removal of 63,000 cubic yards of shoaled material, restored to authorized 15' depth.

Project authority for the existing project is House Document No. 521, 87th Congress.

## C. Proposed Project Description

### 1. Dredging

The proposed project involves the widening of the existing 15 ft. deep West Bulkhead channel from 150 feet to 200 feet, continuation of the West Bulkhead channel into the North Basin at a depth of 10 feet and width of 150 feet. This dredging will generate approximately 22,400 cubic yards of silt and sand to be removed from the proposed project area. Dredging of the material would likely be accomplished by means of a hydraulic suction dredge.

Approximately 22,400 cubic yards of silty material will be hydraulically dredged from the West Bulkhead and North Basin areas and disposed in a previously used upland site (see Figure 2).

### 2. Disposal

The previously used disposal site behind the "Escape Roads" is proposed for disposal of silty material dredged from the North Basin. The hydraulic slurry will be pumped to this site for dewatering. The associated material will then be trucked to be used for upland fill.

## D. Alternatives

### 1. No Action

Continued development of the commercial fleet in Point Judith Pond would suffer if navigational channels and available berths are not expanded. Increased incidences of grounding, difficulty in boat maneuverability, and tidal delays could also result.

### 2. Modifications of Proposed Dredging

Navigation improvement dredging of the Federal channel in Point Judith will be accomplished using a hydraulic pipeline dredge. The hydraulic dredge will remove the substrate in a slurry containing 80% water and 20% solids. The material will travel through a pipeline to the disposal site.

Removal of the dredged material can also be accomplished using a bucket and scow. The material would be transferred to a barge and transported to an ocean disposal site. However, there are currently no designated ocean disposal sites in the vicinity of Rhode Island. The small cubic yardage to be disposed in the upland site would not be barged to another states ocean disposal site due to economic constraints. Hydraulic dredging allows for the most economical use of the dredged material as the material can easily be pumped to the upland site.

The channel expansion, as proposed, represents sound engineering considerations for safe navigation of the harbor. The initial plans for dredging in Point Judith Pond included a proposal to widen (100' to 150') and deepen (6' to 15') the West Channel State Pier No. 4 to High Point. This dredging activity would generate approximately 179,100 cy of sandy material which could be used for beach nourishment. Incremental analyses of the cost to benefit ratios indicated that this portion of the project could not be economically justified. A reduction in any other portion of the proposed channel configurations would also represent a reduction in the potential fleet expansion.

### 3. Modifications of Proposed Disposal

Upland disposal is the most feasible option for disposal of the approximately 22,400 cy of dredge material. The sediments from the North Basin are too fine to be suitable for beach nourishment and cost considerations preclude ocean disposal. The proposed upland disposal site has been used in the past by the state and will be used in the future for the dewatering of fine sediments generated during the proposed State dredging operations.

## E. Affected Environment

### 1. Dredging Site

#### a. General

Point Judith harbor represents a complex coexistence of a major fishing port and a productive estuarine ecosystem. Offshore draggers unload their catches; the Block Island ferry service is in constant use; local small fishing/lobstering vessels moor in the shallows; an active fishing charter fleet and head boat industry berths in the north basin; various support (repair, fuel, etc.) facilities for vessels are located on either harbor coast; recreational vessels transit and berth the harbor; commercial clam and scallop harvesting is undertaken in all sections of the harbor and the ecosystem supports a productive variety of intertidal and subtidal habitats which are exploited for commercial and recreational benefit. The beaches and associated motels, restaurants and retail stores all experience heavy seasonal tourism.

The Rhode Island Coastal Management program has designated the Point Judith/Galilee Harbor ecosystem as an area for preservation and restoration (RICZM, 1978). The Coastal Zone Management program places high value on the natural resources (shellfish, finfish, waterfowl) of Point Judith Pond. The pond is categorized for multiple use recreation. In assigning priority uses for the shoreland RICZM allows development to occur along the west and east harbor shorelands at Jerusalem and Galilee. Medium to low intensity development may occur on Great Island. The priority use for the southwestern portion of Great Island and the North Basin area is recreation, the marshes at Galilee and Succotash are preserved for conservation.

#### b. Physical and Chemical Environment

Point Judith Pond is oriented perpendicular to the coast on a north-south axis. The pertinent physical characteristics of the pond are noted in Table 1. It is approximately 9 km long and averages 1.85 km in width. Freshwater input from the Saugatucket River averages  $33 \times 10^3 \text{ m}^3$  per tidal cycle. The physical oceanographic characteristics of the northern and southern portions of Point Judith Pond are sufficiently different to merit separate discussion.

The southern portion of Point Judith Pond behaves like a well mixed, open estuary (Licata, 1981). Tidal forces dominate in the lower pond and Harbor of Refuge. Tidal currents through the breachway are typically 1 to 3 knots. These tidal currents carry an estimated 16,000 cubic yards of sand into Point Judith Pond each year, making it necessary to dredge the harbor every 5-10 years. The flood tide delta includes the turning basin and the sand bars to south and north of Little Comfort Island. Accumulation of sediment is most rapid in the turning basin. The ebb tide currents have created a tidal delta along the Jerusalem shore and



the west wall of the Harbor of Refuge in the main access channel. Sedimentation rates in areas other than these tidal deltas are low. Despite strong tidal flushing only 5% of the water in the southern portion of the pond is exchanged on each tide.

The influence of the tide is much weaker at the northern end of the pond. The water level rises and falls in a simple pumping motion, tidal currents are weaker and the area poorly flushed. A two-layered estuarine circulation pattern is established as saline water from the lower pond moves upward along the bottom and freshwater from Saugutucket River flows seaward along the surface.

The upper pond with its poor flushing and sluggish circulation is more prone to eutrophication and more likely to retain pollutants than the lower pond. Similar hydrologic patterns of restricted flushing occur in Bluff Hill Cove making this area susceptible to such impacts as well. The conservative circulation patterns in the northern pond and the more restricted coves are reflected in the increased organic matter in the bottom sediments. North of Harbor Island the organic content of sediments may exceed 8%, a level which is considered typical of eutrophic waters (Friedrick, 1982).

Sediment samples were taken at 5 locations within Point Judith pond, along the proposed dredge site (see Figure 2). Three sediment cores, Stations "A", "B", and "C", were taken in the North Basin area. Attempts to obtain cores in the West Bulkhead Channel were unsuccessful due to the sandy and non-cohesive nature of the sediment. Therefore surface grabs were taken at Stations "D" and "E". Samples from Stations "A"- "D" underwent both physical and chemical testing, while Station "E" underwent physical testing only. Partitioning the sediment cores prior to analysis, allows for comparison of surface and below surface sediments.

The sediments consist primarily of fine sand and silts (Table 2). The sediments from the North Basin (Stations "A", "B" and "C") were finer grained than those of the West Bulkhead Channel (Stations "D" and "E".) Station "A" had the finest grained sediments. The median grain size of surface sediments at this location was 40-um, 55% fines. As a general trend sediments became coarser toward the West Bulkhead Channel. The coarsest sediments were found at Station "E". Sediments here were characterized as medium-fine sand (median grain size 320-um) with less than 1% silt.

Bulk chemical analysis of sediment samples were performed at the Army Corps of Engineers Water Quality Laboratory, Hubbardston, MA. Results of this analysis are presented in Table 3. Using the classification of dredge material recommended by Seavey and Pratt (1979), surface sediments can be classified as Class I material for chemical concentration. Subsurface sediment from Station A exceeded Class I criteria for percent fines and percent volatile solids. Analysis of the C:H:N data from Station "A" indicates that these sediments were rich in organic

matter. In general, concentrations of large hydrophobic organic molecule and heavy metals are negatively correlated with grain size, and positively correlated with organic matter. The slightly higher concentrations at Station A are consistent with this hypothesis.

TABLE 1 PHYSICAL CHARACTERISTICS OF POINT JUDITH POND FOR CRMC, 1984

Salt Pond

Area	$7.85 \times 10^6 \text{ m}^2$
Average Depth	1.8 m
Mean Annual Salinity	$30 \times 10^{-3}$
Freshwater Inflow	$25.3 \times 10^6 \text{ m}^3/\text{yr}$
Tidal Range	44.5 cm
Inlet Dimensions	80 x 4.6 m

Water Shed

Area	$2162 \times 10^6 \text{ m}^2$ (1)
Developed Area	35%
Undeveloped	58%
Agriculture	3%
Public Parks	4%

(1) Excluding Saugatucket River watershed

TABLE 2 PHYSICAL CHARACTERISTICS OF SEDIMENTS

<u>Station</u>	<u>Depth (ft)</u>	<u>Description</u>	<u>Median</u>	<u>% Fines</u>
A	0.0-0.25	Fine Sand - Silt Clay	40	55
	1.8-2.05	Fine Sand - Silt Clay	13	80
B	0.0-1.7	Silty-Fine Sand	14	10
C	0.0-0.5	Silty-Fine Sand	130	29
	0.5-1.4	Silty-Fine Sand	120	25
D	Surface	Silt, Medium-Fine Sand	220	13
E	Surface	Medium-Fine Sand	310	<1%

b. Biological Environment

Sea grasses and macroalgae are the dominant primary producers in the shallow salt ponds of Rhode Island. The production and distribution of eelgrass in Point Judith Pond was studied by Thorne-Miller and others (1983). There are eelgrass beds in the North Basin area of Galilee near Little Comfort Island. Most of these beds lie along the north shore of the basin directly adjacent to the proposed activity. Eelgrass beds are ecologically important to numerous vertebrate and invertebrate species. On 19 August 1987, three replicate fish seines were taken through the eelgrass beds. The animals captured in the seine were

TABLE 3

Point Judith Harbor, Rhode Island  
Bottom Sediment Sample Test Results

Stations A through D  
31 July through 2 August 1985

SAMPLE SITE	Site A		Site B			Site C		Site D
Depth (Ft)	0.0-0.25	1.8-2.05	0.0-0.25	1.6-1.85		0.0-0.25	1.75-2.00	Surface
% Solids	61.2	40.0	60.6	70.3	69.3	67.0	70.9	
% Volatile Solids EPA	3.25	10.30	3.74	1.97	2.19	2.16	1.90	
% Volatile Solids NED	1.91	6.41	2.35	1.00	1.29	1.20	0.63	
Chemical Oxygen Demand (ppm)	25,700	107,000	22,800	18,000	12,200	24,300	12,600	
Oil & Grease (ppm)	130	520	85	64	97	130	55	
Mercury (ppm)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Lead (ppm)	14	40	<13	<12	<13	<13	<13	
Zinc (ppm)	93	126	35	28	37	38	20	
Arsenic (ppm)	1.3	4.1	1.4	2.2	1.0	1.2	1.3	
Cadmium (ppm)	<2	<2	<2	<3	3	3	3	
Chromium (ppm)	<19	28	<19	<19	<19	<19	<19	
Copper (ppm)	32	54	21	126	22	21	16	
Nickel (ppm)	<21	<21	<21	<21	<21	<21	<21	
Vanadium (ppm)	<92	<92	<92	<92	<92	<92	<92	
% Carbon	1.04	4.03	0.75	0.58	1.12	0.89	0.73	
% Hydrogen	0.21	0.74	0.16	0.11	0.22	0.13	<0.10	
% Nitrogen	0.12	0.44	<0.1	<0.1	0.12	<0.10	<0.10	
DDT - (ppb)	<10	<10	<10	<10	<10	<10	<10	
PCB - (ppb)	<60	<60	<60	<60	<60	<60	<60	

identified to species level in the laboratory. An epifaunal species list for the beds is presented in Table 4. Eel grass beds are thought to be nursery areas for fish species such as winter flounder, tautog and white perch.

Table 4. Epifaunal organisms inhabiting  
eelgrass bed in North Basin Area of Point Judith  
Pond, Summer 1987

Fish

White Perch (Morone americanus)  
Silersides (Menidia menidia)  
Mummichugs (Fundulus majalis)  
Pipe fish (Sygnathus fucus)

3 spined sticklebacks (Gasterosteus spp.)

Winter flounder juvenile (Pseudopleuronectes americanus)

Arthropods

Common prawn (Paleomonetes vulgaris)  
isopod (Idotea balthica)  
green crab (Carcines maenus)  
hermit crabs (Pagurus longicarpus)  
common spider crab (Libinia emarginata)  
sand shrimp (Crangon septempinosa)

Molluscs

Blue mussel (Mytilus edulis)  
Common periwinkle (Littorina littorea)  
Mud snail (Nassarius trivittatus)  
Limpet (Crepidula fornicata)

To evaluate the effects of dredging on the benthic community, on 29 July 1986, four replicate benthic grab samples were taken from within the North Basin area with a 0.04m<sup>2</sup> Van Veen grab. The sediments consisted of silty-sandy material. Eel grass detritus and polychaete tubes were visible on the surface sediments. The sediments had a sulfur smell; the apparent oxidation-reduction discontinuity was approximately 1 mm. Samples were sieved through a 500-um sieve. The animals were fixed in 10% buffered formalin and stained with rose bengal to facilitate sorting. Species identifications were made to the lowest possible taxon, by benthic ecologists at the Army Corps of Engineers, Waltham, Ma. Species composition and the abundances of benthic invertebrates collected in each of the grabs are listed in Table 5.

Table 5. Benthic Infauna  
Point Judith, RI  
July 1986

	A	B	C	STATIONS		
				D	MEAN	SD
Polychaetes						
Eteone Lactea	30	30	21	36	29.25	5.4
Eumida sanguinae	12	2	11	0	6.25	5.3
Exogone dispar	2	5	19	20	11.5	8.1
Nereis virens	21	22	25	22	22.5	1.5
Diopatra cuprea	1	0	0	0	0.25	0.4
Lumbrinereis tenuis	1	1	0	2	1	0.7
Scoloplos robustus	2	3	9	11	6.25	3.8
Polydora ligni	23	32	39	45	34.75	8.2
Cirratulidae spp.	0	0	0	1	0.25	0.4
Capitella spp.	467	1444	592	1596	1024.75	500.1
Owenia fusiformis	0	1	1	0	0.5	0.5
Cistenides gouldii	0	0	1	0	0.25	0.4
Arthropods						
Oxyurostylis smithi	0	0	7	3	2.5	2.9
Edotea trilobata	1	2	34	4	10.25	13.8
Jaera marina	0	0	2	0	0.5	0.9
Ampelisca vadorum	12	71	28	128	59.75	44.9
Corophium insidiosum	73	185	288	113	164.75	81.7
Aeginina longicornis	0	0	2	0	0.5	0.9
Crab megalops	1	0	0	0	0.25	0.4
Bivalves						
Littoria littorea	0	0	1	0	0.25	3.7
Nucula annulata	0	3	6	10	4.75	0.4
Tellina agilis	1	1	0	1	0.75	0.4
Mya arenaria (juv)	0	0	1	0	0.25	0.4
Miscellaneous Taxa						
Nematoda	70	0	83	500	163.25	197.0
Cerebratulus lacteus	1	0	1	2	1	0.7

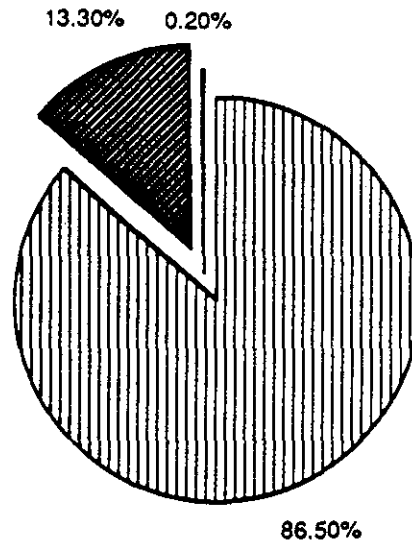
The assemblage of benthic organisms in the North Basin consist of mostly opportunistic species (sensu McCall, 1977). Polychaetes were the dominant taxa in all four grab samples, representing 66% to 86% of the animals (Figs. 3 and 4). Most of these polychaetes can be characterized as opportunistic species with reproductive traits (short generations, large broods, high dispersal) which enable them to colonize open habitats (McCall, 1977). Capitella spp. were the overwhelming

# Point Judith, Rhode Island

## Benthic Grab Samples

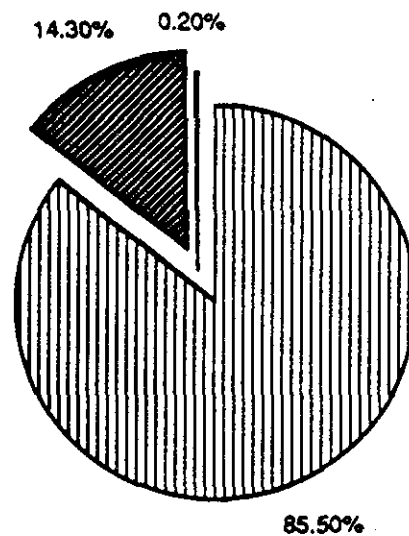
July 1987

Station A



polychaetes  
arthropods  
bivalves

Station B



polychaetes  
arthropods  
bivalves

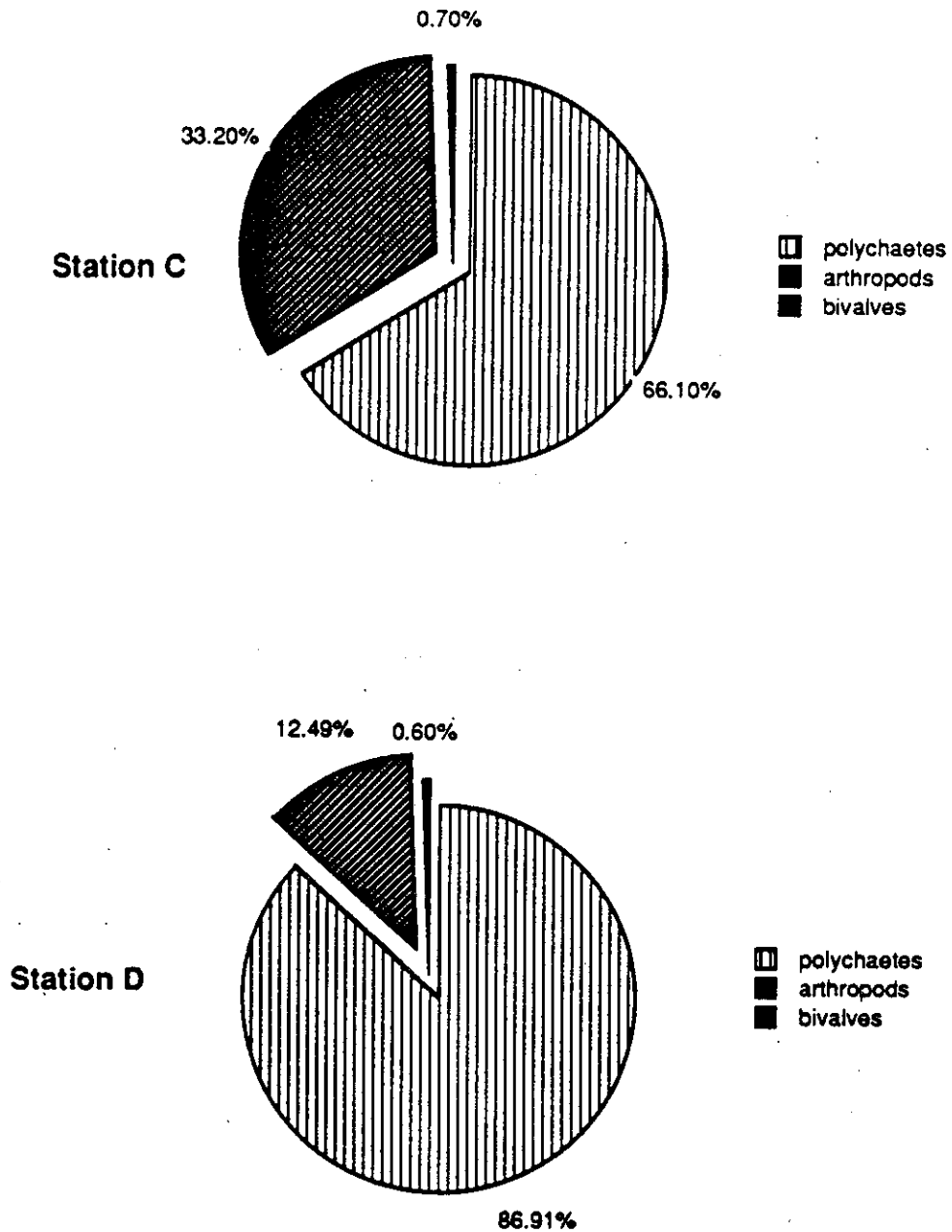
Harbor of Refuge  
Point Judith Pond  
Rhode Island

Benthic Grab Samples  
Stations A and B

# Point Judith, Rhode Island

## Benthic Grab Samples

July 1987



Harbor of Refuge  
Point Judith Pond  
Rhode Island

Benthic Grab Samples  
Stations C and D

dominants in all four grabs, Polydora ligni ranked second in abundance. Deposit feeding polychaetes such as Capitella and Polydora are typical early colonizers of dredge areas.

Arthropods were the next most abundant taxa making up 13 to 33% of the animal abundance. The tube building amphipods Corophium insidiosum and Ampelisca vadorum were the most abundant arthropods in the samples. Both are annual species with reproduction occurring between April and August. They produce multiple broods, as such they are likely to recolonize an area within a year. Bivalves were in low abundance in the dredging area comprising less than 1% of the benthic fauna.

Point Judith Pond in the past decade has supported various commercial and recreational fisheries. Some of the species harvested commercially include winter flounder, scup, eel, scallops and quahog. In the commercial sense winter flounder and scallops are the most important finfish in Point Judith Pond. The salt ponds of Rhode Island contain large seasonal populations of winter flounder. This species begins its migration into the ponds in mid-October prior to the spawning season which extends from December to late March. The ponds are believed to be the spawning grounds for a major portion of the sizeable Block Island Sound winter flounder population.

The hydrodynamic properties of upper Point Judith Pond make it particularly good spawning habitat for winter flounder. The waters above Beef Island mix slowly with the waters of the lower pond. In the lower pond planktonic larvae may be swept out into the ocean by strong tidal currents. The slight tidal currents and two-layered estuarine circulation pattern in the upper pond tends to conserve the winter flounders' free-floating demersal eggs.

Recent evidence suggests there are distinct sub-populations of winter flounder in the salt ponds which feed and spawn on distinct home grounds (Crawford, 1983). In Point Judith Pond, spawning occurs primarily in the upper pond on a gravel bar known as Rocky Island, and to a lesser extent near Gardner Island. Despite extensive sampling (Crawford, 1983), no evidence of spawning was found in other areas of the pond potentially suitable as spawning habitat. The principle feeding ground in Point Judith Pond is in the basin north of the sand flats. Tagging studies provide further evidence that adults feed and spawn within a limited home range to which they return each fall. Although there are no known flounder spawning areas in the project area, the eelgrass beds may be used as a nursing ground for juvenile winter flounder.

Eelgrass beds are also particularly good habitat for the commercially valuable Bay Scallops (Argopectin irradians). The Point Judith area produces approximately 75% of the scallops harvested in Rhode Island. In addition to scallops, the shellfish resources in Point Judith Pond include the soft shell clam (Mya arenaria), and the quahog (Mercenaria mercenaria). Rhode Island's Coastal Zone Management has



characterized Point Judith as a highly valued shellfish resource. Pollution problems have led to some shellfish beds to be closed to harvesting. Despite the closures, shellfish from polluted areas are an important resource to be protected because they supply recruitment stock for the harvested area. The bivalves spawn in the summer months, and it is during this time that populations are most susceptible to dredging impacts.

The fisheries populations in Point Judith Pond are subject to wide fluctuations between years. Populations of winter flounder in the pond vary dramatically between years. The scallop population is highly unstable. During good years Point Judith Pond can produce 20,000 bushels of scallops, while in other years scallops are practically absent. Long term records indicate 20 to 25 years cycles in abundance (Olsen and Stevenson, 1975). Despite disappointingly low catches in 1985 the scallop fishery appears to be on the upswing of a long term cycle.

These fluctuations in fish population are indicative of the fragile nature of the Salt Pond ecosystem. Perhaps the greatest threat to the system comes from eutrophication associated with excessive nutrient input which leads to excessive macroalgal growth (Lee and Olsen, 1985). Symptoms of eutrophication are predominant during the summer months. Algal rafts entangle in eelgrass beds choking off shellfish. Dense growths of Enteromorpha occur around the sides of the pond. Thick growths of Gracilaria cover the bottom in portions of the pond (Thorne-Miller et al. 1983). As temperatures rise in July and August the macroalgae decay causing dissolved oxygen levels in the water column to decline creating anoxic conditions in the more restricted coves. The bottom becomes covered with organic mud decreasing the suitability of the habitat for desirable finfish and shellfish species. This is especially a problem in the upper coves where the organic content of the sediments may exceed 8%, a level typical of eutrophic waters (Friedrick, 1982). Eutrophication may also be a problem in Bluff Hill Cove, which is near the project area.

The salt marsh to the north of Galilee Escape Road consists of a wide variety of typical salt marsh plants. Cord grass (Spartina alterniflora) is present along the tidal banks of the salt marsh. Higher up on the marsh the vegetation is dominated by salt meadow grass (Spartina patens) and spike grass (Distichlis spicata). Also present on the high marsh are sea lavender (Limonium carolinianum) and arrow grass (Triglochia martina).

The two 30-inch culverts underneath the Galilee Escape Road were designed to preserve a portion of the salt marsh south of the road. The marsh area within the influence of the culvert supports salt marsh vegetation similar to that north of the road. The rest of the area south of the Galilee Escape Road is dominated by the common reed (Phragmites australis) and small shrubs.

Another natural areas of critical wildlife habitat potentially impacted by the project is the Galilee Bird Sanctuary. This is of great significance because the lack of suitable habitat is the most critical limitation on Rhode Island's waterfowl population. Estuaries, coastal ponds and adjacent marshes provide some of the state's best remaining habitat for some 35 species of migrating and nesting waterfowl and shore-birds. Rhode Island's central position in the Atlantic flyway makes its estuary habitats particularly important during migration. Bufflehead, red breasted merganser, and white winged scoter are the primary wintering waterfowl near Little Comfort Island (Rhode Island Department of Fish and Wildlife). The area is also used to a lesser degree by mallard, black duck, Canada geese and brant.

## 2. Disposal Sites

### a. General

The upland containment area is located behind the "Escape Road" adjacent to the Galilee Bird sanctuary. The dredged material containment site has a 37,500 c.y. capacity and is separated from the adjacent wetland by an earthen dike. The vegetation in the upland containment site and adjacent wetland was qualitatively described on 19 August 1987. Although previously part of the salt marsh, the containment area has been subject to the periodic disturbance of dredge and fill operations and road construction. The soil in this area consists of dredged material from previous disposal operations and is not indicative of wetland soil. The vegetation consists of common reed, autumn olive (Elaeagnus umbellata), bayberry (Myrica pensylvanica), golden rod (Solidago spp.), rose and herbaceous ground covers.

The wetland abutting the containment area is dominated by common reed and also contains arrow-wood (Viburnum dentatum), bayberry, swamp rose (Rosa palustris), joe-pye-weed (Eupatorium maculatum), red cedar (Juniperus virginiana), and woody vines. The substrate consists of sandy dredged material with mottling within 14 inches of the surface layer.

## 3. Threatened and Endangered Species

Early coordination with state and Federal agencies identified Piping Plover (Charadrius melodus) as a Federally listed endangered species that could be impacted by the project. As beach nourishment is no longer a disposal option Piping Plover populations in the Point Judith area will not be affected by the project.

No other Federally listed species are known to exist at the project site, although the Leatherback turtle (Dermochelys coriacea) has recently washed ashore near the proposed project.

#### 4. Ecologically Significant Species

Winter Flounder. Winter Flounder migrate into Point Judith Pond as offshore waters cool in the autumn months. The greatest concentrations in the estuary is between December and March. Winter Flounder spawn mid-winter to early spring. The females lay small (0.7 to 0.1 mm) demersal eggs. The larvae are 3 to 3.5mm in size at hatching. Within 12 to 15 days the yolk is completely absorbed and the larvae have grown to an average size of 5.0 mm. Metamorphosis is complete within 2-1/2 to 3-1/2 months, the larvae are 8 to 9 mm long. Early larval stages are most abundant in the upper estuary and gradually move lower in the estuary as they grow. The winter flounder migrate offshore to cooler coastal waters as water temperatures warm in the late spring. Growth data on winter flounder is incomplete. Females are reproductively mature at 2-3 years. Three year old flounder average 270 mm in size after ten years they grow to an average size of 450 mm.

Bay Scallops. Scallop season in Rhode Island is from October to December. The scallops spawn in June and July. The planktonic larvae attach to eelgrass blades or other substrate. By the end of August they have developed into small scallops about 15 mm in diameter. The average life span for the scallop is between 20 to 22 months. Relatively few animals survive for a second spawning season.

Soft shell clams. The Bluff Hill Cove are just north of Great Island Bridge is a very productive soft shell clam area. Mya arenaria are sexually mature and capable of spawning at 2 years of age. Spawning takes place between mid-April and mid-June. Mya has a pelagic larval life lasting 12-13 days. By the end of the first growing season they average 15-20 mm in size.

Hard shell clams. Quahogs are harvested recreationally in the Bluff Hill Cove area. The quahog, Mercenaria mercenaria spawns from June to mid-August. Mercenaria has a pelagic larval stage which lasts 5-24 days. Growth occurs in the summer. The clams are capable of spawning in 2 years.

#### 5. Historic and Archaeological Resources

There are no known historical or archeaological resources in the proposed project area. The disposal site has been used previously, so the presence of significant archaeological or historic resources at the site is unlikely.

#### 6. Social and Economic Resources

Point Judith is located in Washington County, Rhode Island which is located near the towns of South Kingston and Narragansett. The population in Washington County, in 1980, was 93,317 which is an 11.6% increase from 1970-1980. This was the highest % change in the State

during that time period. South Kingston experienced a 20.7% increase from 1970 with a population in 1980 of 12,088. The total population for the State of Rhode Island was 947,154 which experienced no significant change.

Point Judith pond located between Galilee and Jerusalem supports one of the largest recreational and commercial fishing fleets in the State of Rhode Island. Rhode Island maintained third place out of the seven New England states in volume and value of fish caught in 1985. The port of Point Judith slipped to fourth place from third in the volume of fish landed but maintained third place in the value of fish caught in 1985.

Federal navigation channel leading to the upper pond is used primarily by recreational boaters. The marine facilities there dock approximately 200 boats.

## F. Environmental Consequences

### 1. Dredging Site

#### a. General

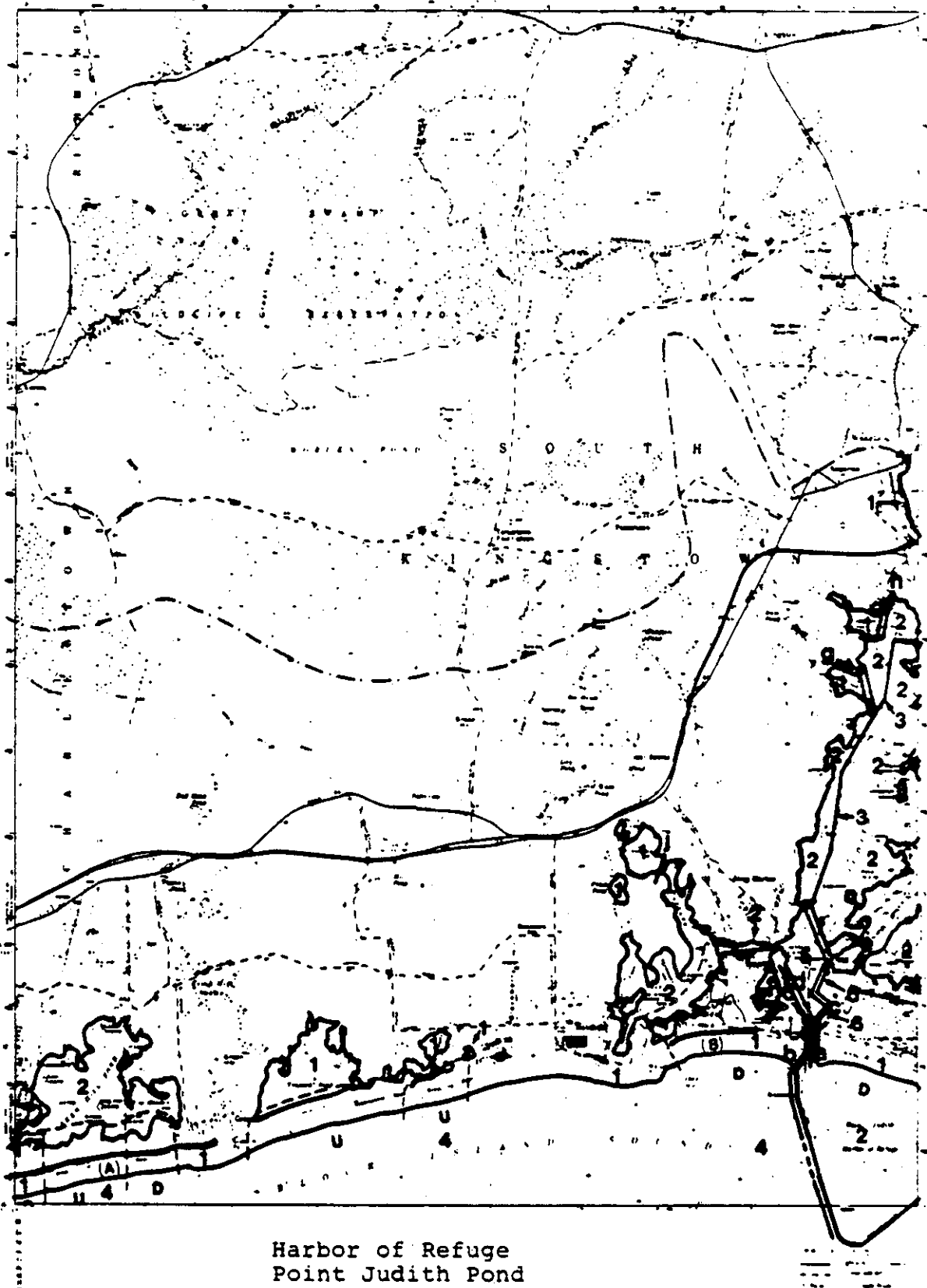
The potential environmental impacts associated with this project are to be weighed against the project benefits in order to develop sound environmental management decision. The State of Rhode Island has already established extensive management plans for the project area. The environmental acceptability of the proposed improvement dredging is therefore a function of its compatibility with the state management plan.

The waters of Point Judith Pond are located in the Kingston Triangle and, based on the proceeding determinations in the RI Coastal Management Program EIS (RICZM, 1978), are designated as Class 5 and 6 waters and shorelines (see Figure 5). The use and development of these areas for a commercial harbor is therefore consistent with the overall management strategy established by the State of Rhode Island.

Management regulations and initiatives for dredging operations in Point Judith Pond are laid down in Rhode Island's Salt Pond Special Area Management Plan (CRMC, 1984). In compliance with these guidelines, the dredging project shall be confined to the designated area and depths and dredging operations shall be scheduled to avoid the January to March winter flounder spawning season. For complete compliance it must be demonstrated that the dredging will not cause significant sedimentation outside of the designated port areas particularly in sensitive areas such as Bluff Hill Cove.

#### b. Physical and Chemical Effects

The primary physical effects of dredging operations in the North Basin area will be 1) the turbidity associated with the resuspension of material during dredging operations 2) habitat removal and 3) potential



Rhode Island Coastal Zone Management  
Coastal Waters and Shoreline Classification

changes in the hydrographic regime associated with modification of the channel. The turbidity generated during the dredging process may temporarily decrease light penetration resulting in decreased productivity. In addition, the dispersal of resuspended sediments will result in the deposition of a fine layer of sediments in certain areas of the pond which may negatively impact eelgrass and shellfish beds. The impacts associated with turbidity are likely to be minor. Suspended sediment concentrations around active dredge sites are typically in the range of 200-800 mg/l, whereas winter storms may result in suspended loads of 1000 mg/l in New England estuaries (Bohlen et al 1979). As the bulk of sediment from the area is fine sand, which should settle out rapidly, the turbidity impacts are likely to be localized. The area of greatest impact is typically within 300 meters of the dredge site (Bohlen et al 1979). The finer grained sediments from Station A may take longer to settle out and will probably be dispersed farther. With the use of hydraulic dredge during operations the turbidity effects of this dredging project can be minimized (WES, 1988).

The effects of the proposed dredging operation on the hydrographic characteristics of the North Basin area are much more difficult to predict. Widening and deepening of the channel should enhance the flushing of the North Basin and potentially Bluff Hill Cove. Changes in the hydrodynamic regime may also alter the local sediment characteristics. The Galilee Bird Sanctuary is another area of critical concern that could potentially be impacted by changes in the hydrology of the pond (RI, DEM).

Dredging operations can affect the chemistry of the system. The chemical oxygen demand of the sediment indicates anoxic conditions in the subsurface sediments from Station A. The resuspension of anoxic sediments may result in a temporary reduction of dissolved oxygen concentration in the waters of the North Basin. Short periods of low DO are generally not a problem in estuaries with a high degree of tidal flushing (Morton, 1977; Krenkel et al., 1976). While no significant effect is expected for the North Basin area, conditions in the more sensitive Bluff Hill Cove area should be closely monitored during dredging operations. Sediments from Station A were also high in organic carbon and nitrogen. Resuspension of sediments from this area would result in a pulse input of nitrogen to the water column, temporarily accelerating primary production potentially leading to localized eutrophication. Dredging in the winter before water temperatures increase would minimize the potential for eutrophication.

To evaluate the potential chemical effects of dredging, sediment samples from four locations "A", "B", "C" and "D" and water from location "B" were collected for use in elutriate testing. The elutriate test can be described as a simplified simulation of the dredging and disposal process (U.S. Army Waterways and Experiment Station, 1976). With the exception of copper and PCB's the elutriate tests show no significant release of chemical substances (Table 6). It should be noted however that the concentration of copper and PCB's in the background water (location

TABLE 6

## ELUTRIATE TESTING-POINT JUDITH, R.I. 1986

Results of tests performed on (1) the standard elutriate prepared from one part sediment taken at various sampling locations with four parts water from the dredging site and (2) water from the dredging site are as follows:

	Dredge Site Water	Standard Elutriate Designation and Sediment Depth Used in Preparation Location "B" 0.0-1.7 ft			EPA Water Quality Criteria
		R1	R2	R3	
Nitrate/Nitrite Nitrogen (N), ppm	0.01	0.02	0.68	0.05	10 a)
Sulfate (SO <sub>4</sub> ), ppm	2410	2565	2264	2534	
Oil & Grease ppm	0.3	1.12	0.32	0.3	
Phosphorus ortho, ppm	0.03	0.01	0.02	0.01	0.10 a)
total, ppm	0.08	0.07	0.08	0.10	0.10 a)
Mercury (Hg), ppb	<1	<1	<1	<1	2.1 b)
Lead (Pb), ppb	<2	<2	<2	<2	140 b)
Zinc (Zn), ppb	<15	<15	<15	<15	170 a)
Arsenic (As), ppb	<2	<2	<2	<2	360 b)
Cadmium (Cd), ppb	<1	<1	<1	<1	43 b)
Chromium (Cr), ppb	<1.2	1.2	1.2	<1.2	1,110 b)
Copper (Cu), ppb	4.3	2.67	9.0	10.5	2.9 b)
Nickel (Ni), ppb	2.4	<2	<2	<2	140 a)
Vanadium (V), ppb	<5	<5	<5	9	--
Total PCB, ppb	0.11	0.57	0.13	0.14	0.03 a) or b)
Total DDT, ppb	<0.01	<0.01	<0.01	<0.01	0.13 a)

a) any one time

b) one hour average once every 3 years

TABLE 7

PCB Results - Elutriate testing  
May 1986

Sample	Depth range of Core, ft.	PCB, ppb		
		1	2	3
"A"	0.0 - 0.7	<0.02	<0.02	<0.02
Location "A" Water			<0.02	
"C"	0.0 - 1.1	<0.02	<0.02	<0.02
Location "C" Water			<0.02	
Blank			<0.02	

"B") were above the EPA criteria. Further elutriate testing was performed on sediments collected on 16 May 1986 from site "A" and "C". The results show PCB concentrations below the instrument detection limit of 0.02 ppb in all elutriate replicates, background water and blanks (Table 7). For this reason, we believe the first PCB result must stem from contamination error during analysis. For copper however; the elutriate test suggests that the dredging operation may result in temporary violation of water quality standards. The flushing characteristics of the North Basin are such that tidal flushing should provide adequate dilution to ensure water quality standards are met.

### c. Biological

The proposed dredging project in the North Basin area of Point Judith Pond may have an impact on benthic organisms in the project area, winter flounder shellfish population and eelgrass beds. With careful monitoring during dredging operations the impacts to these resources should be minimal and the overall effects of the project on the salt pond ecosystem non-significant.

**Benthos.** The most immediate biological impact will be the direct mortality of benthic infauna in the project area. Secondary impacts to the surrounding benthic community include the mortality associated with burial and siltation effects.

The benthic community in the immediate area of dredging is dominated by opportunistic deposit feeding species. Deposit feeders are as a rule less susceptible to siltation effects than are filter feeders. Most of the species are motile or discretely motile (*sensu* Fauchald and Jumars, 1979) and capable of burrowing through a fine layers of sediment or moving away in response to a disturbance (Nichols *et al.* 1978). As opportunistic populations are well adapted to recovery from small scale disturbance, recolonization of the area from adult migration and larval settlement is likely to be rapid on the order of months.

**Fish.** The impacts of the project on the flounder fishery are assumed to be non-significant as all known winter flounder spawning grounds are well north of the project area. Dredging in the North Basin may however affect juvenile flounder using the eelgrass beds as a nursery. To avoid these impacts no dredging will take place between January and March and eelgrass beds will be avoided during dredging.

**Eelgrass.** Sampling conducted by the Army Corps of Engineers and U.S. Fish and Wildlife Service (29 July 1986) revealed that it is possible to widen the channel to the 200' mark while avoiding the eelgrass beds. The turbidity associated with dredging may result in a short term decrease in primary production. However, the effect of this on the ecosystem should be minimal. The small size of the project suggests the amount of material likely to be resuspended during dredging should be small enough that burial of eelgrass is not a major issue nor is the epifauna associated



with the eelgrass likely to be seriously impacted. These organisms are for the most part highly motile and should be able to escape the turbid waters by migrating to the more shoreward beds.

Shellfish. Filter feeding shellfish are probably the most susceptible to turbidity/ siltation effects. The impacts on the dredging project to shellfish in the region or likely to be minimal for the following reasons:

1. Benthic grab samples in the immediate project area suggest that shellfish make up a small percentage of the benthic infauna.
2. Eelgrass beds will be avoided.
3. The productive shellfish beds to the east of Great Island Bridge are located a sufficient distance away (0.5 mile) to not be heavily impacted by the dredging operation.
4. The shellfish populations are most susceptible to dredging impacts during the summer months, as this is a period of spawning and recruitment. To avoid these impacts, a dredging window restricting operations in the summer months (June to Sept) will be imposed (see mitigation).

## 2. Disposal Sites

### a. General

An upland site will be used for dewatering the dredge spoils. This site is located along the Escape Road in Galilee and has been used previously for dewatering by the State of Rhode Island. Dewatering of dredged materials should occur behind a berm of sufficient height to contain the material (CRMC, 1984). The dredging project will generate approximately 100,000 cu. yds. of sediment slurry. Since the capacity of the containment area is 26,000 cu. yds. Filtering devices will have to be installed to prevent the deposition of fine material onto the adjacent wetland. After dewatering the material will be removed by truck to upland landfills for disposal, and the dewatering site will be returned to its original elevation.

### b. Physical and Chemical Effects

EP toxicity tests are generally performed on dredged material destined for upland disposal. They are "designed to identify wastes likely to leach hazardous concentrations of particular toxic constituents into the ground water" (Federal Register, May 19, 1980). The results of the EP toxicity test indicate that the concentrations of chemical substances in the sample extracts were well below the EPA criteria (see Table 8). With the exception of Arsenic and Selenium all chemical substances were below the instrument limit of detection, and not likely to have any adverse environmental effects.

c. Biological Effects

The dewatering site is located near the Galilee Salt Marsh and Bird Sanctuary. No significant impacts are expected from the proposed disposal operation provided that no material is placed or leaches out of the containment area onto the wetlands. The existing vegetation within the containment area would be destroyed. Similar species of vegetation would begin to colonize the area after the project is completed.

TABLE 8

EP Toxicity Test Results  
Point Judith, RI - 1985 Sampling

EPA Criteria Substance	Concentrations in sample extracts, ppm			Location	
	<u>ppm</u> <u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	
Arsenic	5.0	0.228	0.257	0.234	0.229
Barium	100.0	<0.1	<0.1	<0.1	<0.1
Cadmium	1.0	<0.01	<0.01	<0.01	<0.01
Chromium	5.0	<0.02	<0.02	<0.02	<0.02
Lead	5.0	<0.05	<0.05	<0.05	<0.05
Mercury	0.2	<0.005	<0.005	<0.005	<0.005
Selenium	1.0	0.19	0.26	0.18	0.19
Silver	5.0	<0.02	<0.02	<0.02	<0.02
Endrin	0.02	<0.01	<0.01	<0.01	<0.01
Lindane	0.4	<0.01	<0.01	<0.01	<0.01
Methoxychlor	10	<0.05	<0.05	<0.05	<0.05
Toxaphene	0.5	<0.05	<0.05	<0.05	<0.05
2, 4-D	10	<0.05	<0.05	<0.05	<0.05
Silvex (2,4,5-T)	1.0	<0.05	<0.05	<0.05	<0.05

### 3. Threatend and Endangered Species

Extensive coordination (see Section H) with state and federal agencies have determined the proposed dredging will have no effect on threatened or endangered species or their critical habitat.

### 4. Ecologically Significant Species.

Winter Flounder. Adherence to the state's restriction on dredging between January and March will minimize the impact on winter flounder populations. No significant effects are predicted.

Shellfish. Avoidance of dredging operations in the summer months (June to Sept) will minimize the impacts on shellfish resources. With this mitigation no significant effects are predicted.

Eelgrass. Impacts to eelgrass beds will not be significant provided that the beds are avoided during dredging and precautions are taken to minimize turbidity (see mitigation).

### 5. Historical and Archaeological Resources

This project will have no effect upon any structure or site of historic, architectural, or archaeological significance as defined by the National Historic Preservation Act of 1966. The Rhode Island Historical Preservation Commission has reviewed the proposed navigation project and has concurred with this finding.

### 6. Social and Economic Impacts

The proposed navigation improvements will allow the development of additional berthing and offloading areas in Galilee Harbor (North Basin). These improvements will alleviate the present port overcrowding and allow continued expansion of the fleet.

### G. Mitigation.

In accordance with State requirements designed to protect winter flounder populations (CRMC, 1984; RIDEM Letter dated 14 May 1986) no dredging shall occur between the months of January and March. The State has also recommended that dredging operations be scheduled at a time when both water temperatures and productivity are low (RIDEM, Letter dated 14 May 1986). This will minimize the negative impacts of the project on the surrounding marshes and decrease the potential for eutrophication.

The U.S. Fish and Wildlife Service's Mitigation policy considers eelgrass beds a category 2 habitat. Direct and indirect impacts of the project on the eelgrass should therefore be avoided (USFW, Letter dated 27 August 1986). USFWS also raised concerns that the turbidity generated during dredging operations could negatively impact the scallop, quahog and

soft shell clam populations to the east of Great Island Bridge. Turbidity impacts will be minimized through the use of a hydraulic dredge. Restricting dredging operations in the summer months will minimize the impacts of the project on the shellfish resources. Therefore no dredging shall take place between June and September.

Dredging operations will be scheduled to take place within DEM's April 1 through May 30 and August 30 through November 15 dredging windows.

#### H. Coordination

Howard N. Larsen  
Regional Director, Region 5  
U.S. Fish and Wildlife Service  
One Gateway Center  
Newton Corner, Ma 02158

3/8/86 Initiated formal coordination on all projects Fiscal Year 1986

Victor Bell  
RI Dept of Environmental Management  
Office of Environmental Coordination  
9 Hayes Street  
Providence, RI 02908

4/9/86 We requested from DEM information on (1) Fish and wildlife (2) wetlands (3) water quality data (4) state threatened or endangered species (5) unique natural areas (6) state parks, recreation and conservation areas and wildlife refuges and sanctuaries. Response letter from DEM dated May 1986.

Daniel W. Varin, Chief  
RI Dept. of Administration  
Office of State Planning  
265 Melrose  
Providence, RI 02903

4/9/86 We requested from the Office of State Planning comments regarding the relationship of statewide, land use planning issues to the proposed navigation improvement project.

Douglas Beach  
National Marine Fisheries Service  
Habitat Protection Branch  
14 Elm Street  
Gloucester, MA 01930

4/29/86 We requested a list of endangered or threatened species for the project area pursuant to Section 7(c) of the Endangered Species Act of 1973 as amended.

Gordon E. Becket, Supervisor  
U.S. Fish and Wildlife Service  
Ecological Services  
P.O. Box 1518  
Concord, NH 03301

4/24/86 We requested information on the presence of Federally listed and proposed endangered or threatened species within the impact area of a proposed small boat navigation project at Narragansett and South Kingston, Rhode Island. Response letter from Fish and Wildlife Service dated 7 May 1986.

6/5/86 Letter to initiate coordination under the Fish and Wildlife Coordination Act for the proposed Point Judith Harbor - Section 107 project. Response letter from Fish and Wildlife dated 27 August 1986.

Chris Raithel  
Division of Fish and Wildlife  
Government Center  
Tower Hill Road  
Wakefield, RI 02879

5/23/86 Telephone conversation concerning the disposal of dredged material on potential Piping Plover habitat.

5/30/86 Requested comments on dredged material disposal impact on Piping Plover or any other relevant resource. Response letter from Division of Fish and Wildlife dated 18 May 1986.

James Beattie  
Dept. of Environmental Management  
Division of Coastal Resources  
State of Rhode Island and Providence Plantations  
60 Davis Street  
Providence, RI 02908

6/18/86 Requested comments on the proposed navigation improvement project for use in preparing Environmental Assessment.

Edward Sanderson  
Rhode Island Historic Preservation Commission  
150 Benefit Street  
Providence, RI 02903

8/6/86 Requested comments regarding the presence of historic or prehistoric resources in the project area. Response letter dated 6 August 1986. Response letter (reduced Scope of Work) dated 27 July 1987.

6/29/86 Corps of Engineers sponsored an interagency field review of the project site.

I. COMPLIANCE WITH ENVIRONMENTAL  
FEDERAL STATUTES AND EXECUTIVE ORDERS

1. Preservation of Historic and Archaeological Data Act of 1974, as amended, 16 U.S.C. 469 et seq

Compliance: Consultation with the State Historic Preservation Office and the Advisory Council on Historic Preservation concerning mitigation of historic and/or archaeological resources signifies compliance.

2. Clean Air Act, as amended, 42 U.S.C. 7401 et seq.

Compliance: Submission of this report to the Regional Administrator of the Environmental Protection Agency for review pursuant to Sections 176c and 309 of the Clean Air Act signifies partial compliance.

3. Clean Water Act of 1977 (Federal Water Pollution Control Act Amendments of 1972) 33 U.S.C. 1251 et seq.

Compliance: A Section 404(b)(1) Evaluation and Compliance Review have been incorporated into this report. An application shall be filed for State Water Quality Certification pursuant to Section 401 of the Clean Water Act.

4. Coastal Zone Management Act of 1972, as amended, 16 U.S.C. 1431 et seq.

Compliance: A CZM consistency determination shall be provided to the State for review and concurrence that the proposed project is consistent with the approved State CZM program.

5. Endangered Species Act of 1973, as amended, 16 U.S.C. 1531 et seq.

Compliance: Coordination with the U.S. Fish Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) has yielded no formal consultation requirements pursuant to Section 7 of the Endangered Species Act.

6. Estuarine Areas Act, 16 U.S.C. 1221 et seq.

Compliance: Not Applicable; this report is not being submitted to Congress.

7. Federal Water Project Recreation Act, as amended, 16 U.S.C. 4601-12 et seq.

Compliance: Coordination with the National Park Service (NPS) and Office of Statewide Planning relative to the Federal and State comprehensive outdoor recreation plans signifies compliance with this Act.

8. Fish and Wildlife Coordination Act, as amended, 16 U.S.C. 661 et seq.

Compliance: Coordination with the FWS, NMFS and RI Department of Environmental Management signifies compliance with the Fish and Wildlife Coordination Act.

9. Land and Water Conservation Fund Act of 1965, as amended, 16 U.S.C. 4601-4 et seq.

Compliance: Submission of this report to the National Park Service (NPS) and Office of Statewide Planning relative to the Federal and State comprehensive outdoor recreation plans signifies compliance with this Act.

10. Marine Protection, Research, and Sanctuaries Act of 1972, as amended, 33 U.S.C. 1401 et seq.

Compliance: Not Applicable; project does not involve the transportation nor disposal of dredged material in ocean waters pursuant to Sections 102 and 103 of the Act, respectively.

11. National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470 et seq.

Compliance: Coordination with the State Historic Preservation Office determined that no historic or archaeological resources would be affected by the proposed project.

12. National Environmental Policy Act of 1969, as amended, 42 U.S.C. 432 et seq.

Compliance: Preparation of this report signifies partial compliance with NEPA. Full compliance shall be noted at the time the Finding of No Significant Impact is issued.

13. Rivers and Harbors Appropriation Act of 1899, as amended, 33 U.S.C. 401 et seq.

Compliance: No requirements for Corps projects or programs authorized by Congress. The proposed dredging project is pursuant to the Congressionally-approved continuing authority program.



14. Watershed Protection and Flood Prevention Act, as amended, 16 U.S.C. 1001 et seq.

Compliance: No requirements for Corps activities.

15. Wild and Scenic Rivers Act, as amended, 16 U.S.C. 1271 et seq.

Compliance: Not Applicable; project is located within the marine environment.

#### Executive Orders

1. Executive Order 11988, Floodplain Management, 24 May 1977 as amended by Executive Order 12148, 20 July 1979.

Compliance: Circulation of this report for public review fulfills the requirements of Executive Order 11988, Section 2(a)(2).

2. Executive Order 11990, Protection of Wetlands, 24 May 1977.

Compliance: Circulation of this report for public review fulfills the requirements of Executive Order 11990, Section 2(b).

3. Executive Order 12114, Environmental Effects Abroad of Major Federal Actions, 4 January 1979.

Compliance: Not Applicable; project is located within the United States.

#### Executive Memorandum

1. Analysis of Impacts of Prime or Unique Agricultural Lands in Implementing NEPA, 11 August 1980.

Compliance: Not applicable; project does not involve nor impact agricultural lands.

## J. References

- Friedrich, N.E. 1982. Depositional environments and sediment transport patterns, Point Judith - Potter Pond complex Rhode Island. M.S. Thesis. University of Rhode Island, Kingston, 124 p.
- Krenkel, P.A., J. Harrison, and J.C. Burdick III. 1976; Dredging and its environmental effects. Proceedings of a specialty conference. ASCE, New York.
- Licata, D.M. 1981 A two-dimensional vertically finite element hydrodynamic model for Point Judith, Rhode Island. MS Thesis. University of Rhode Island, Kingston, 152 p.
- McCall, P.L. 1977. Community patterns and adaptive strategies of the infaunal benthos of Long Island Sound. Journal of Marine Research 35:221-262.
- Morton, J.W. 1977. Ecological effects of dredging and dredge spoil disposal: A literature review. Tech Paper No. 94. U.S. Fish and Wildlife Service.
- Nichols, J.A., G.T. Rowe, C.H. Clifford and R.A.Young. 1978. In-situ experiments on the burial of marine invertebrates. Journal of Sedimentary Petrology 48:419-425.
- Oliver, J.S., P.N. Slattery, L.W. Hulberg, and J.W. Nybakken 1977. Patterns of succession in infunal benthic communities following dredging and dredged material disposal in Monterey Bay. Tech. Reprt. D-77-27, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.
- Olsen, S.B. and D.K. Stephenson. 1975. Commercial Marine Fish and Fisheries of Rhode Island. Mar. Tech. Rept. No. 4. University of Rhode Island, Kingston, 110 p.
- Olsen, S., D.D. Robadoe; and V. Lee. 1980. An Interpretive Atlas of Narragansett Bay. Marine Bulletin 4. Coastal Resources Center, University of Rhode Island.
- Olsen, S. and V. Lee. 1984. Rhode Islands Salt Pond Region: A Special Area Management Plan; Adopted November 27, 1984. The Coastal Resources Center, University of Rhode Island, Providence, RI.
- Seavey, G.L. and S.D. Pratt, 1979. The disposal of dredged material in Rhode Island. An evaluation of past practices and future options. Coastal Resources Center, University of Rhode Island. Marine Technical Report NO. 72

Thorne-Miller, B., M.M. Horlin, G.B. Thursby, M.M. Brady-Campbell and B.A. Dworetzky 1983. Variations in the distribution and biomass of submerged macrophytes in five coastal lagoons in Rhode Island, U.S.A. Bot. Mar. 26-231-242.

WES, 1988. Sediment resuspension by selected dredges Environmental Effects of Dredging Technical Note EEDP-09-2 U.S. Army Corps of Engineers Waterway Experiment Station, Vicksburg, MS



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

HISTORICAL PRESERVATION COMMISSION

Old State House  
150 Benefit Street  
Providence, R.I. 02903  
(401) 277-2078

July 27, 1987

Mr. Joseph L. Ignazio  
Chief, Planning Division  
New England Division, Corps of Engineers  
Department of the Army  
424 Trapelo Road  
Waltham, MA 02254-9149

Dear Mr. Ignazio:

The Rhode Island Historical Preservation staff has reviewed the reduced-scope proposal for widening and extending the West Bulkhead channel at Point Judith.

We concur with your finding that the project will have no effect on significant historic or archaeological resources, as defined by the National Historic Preservation Act of 1966. Therefore, we have no objections to the project.

Thank you for the opportunity to comment.

Very truly yours,

*Edward F. Sanderson*

Edward F. Sanderson  
Executive Director  
Deputy State Historic  
Preservation Officer

EFS:cc



# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
ECOLOGICAL SERVICES  
P.O. BOX 1518  
CONCORD, NEW HAMPSHIRE 03301

Joseph L. Ignazio, Chief  
Planning Division  
U.S. Army Corps of Engineers  
424 Trapelo Road  
Waltham, Massachusetts 02254-9149

AUG 27 1986

Dear Mr. Ignazio:

This responds to your Jun. 5, 1986 request for input under the Fish and Wildlife Coordination Act regarding the Point Judith Harbor project in Rhode Island. The proposed project involves (1) widening of the existing 15 foot deep west bulkhead channel in Galilee from 150 feet to 200 feet, (2) continuation of the west bulkhead channel into the north basin at a depth of 18 feet and width of 150 feet, (3) widening and deepening of the west channel from State Pier No. 4 to High Point from 100 feet to 150 feet and 6 feet to 12 feet, respectively, and (4) disposal of suitable dredged material along Sand Hill Cove and/or East Matunuck State Beach.

I delayed responding to your request until Ron Joseph of my staff had an opportunity to participate in a Corps of Engineers sponsored interagency field review of the project site on July 29, 1986. Although not specifically requested in your letter, I am also providing you with input on the presence of Federally listed and proposed endangered or threatened species within the impact area of the proposed project.

Our review shows that a pair of piping plovers, a Federally listed threatened species nested at nearby East Matunuck State Beach in 1985, a potential disposal site for dredged material from your project. We do not anticipate any conflicts with this species since the birds are not present this year and your proposed disposal activity would be conducted during the fall months. However, we urge you to work closely with Mr. Chris Raithel of the Rhode Island Department of Environmental Management to obtain the most current information on plovers in the project area to avoid impacting their nesting habitat. No other Federally listed species under our jurisdiction are known to exist in the project impact area. You may wish to contact the Rhode Island Department of Environmental Management for information on state listed species. We also suggest you contact the National Marine Fisheries Service for information on Federally listed marine species since an endangered leatherback turtle recently washed ashore near the proposed project. No Biological Assessment or further consultation is required with us under Section 7 of the Endangered Species Act. Should project plans change, or if additional information on listed or proposed species becomes available, this determination may be reconsidered. A list of Federally designated endangered and threatened species in Rhode Island is enclosed for your information.

There are a number of estuarine resources that need to be addressed during your planning process. In the North Basin area of Galilee near Little Comfort Island, the proposed channel widening has the potential to impact eel grass beds. Most of these beds lie directly south and adjacent to your proposed activity. Due to their ecological importance to numerous invertebrate and vertebrate species, these beds should not be impacted by channel dredging operations. Sampling conducted by the Corps of Engineers and the Fish and Wildlife Service on July 29 revealed that it is possible to widen the channel to the 200 foot width while avoiding these beds. However, dredging operations must be closely monitored in the North Basin to avoid impacting the productive eel grass beds. In accordance with the Fish and Wildlife Service's Mitigation Policy, we consider these eelgrass beds to be resource category 2 habitat because of their high value to estuarine life and relative scarcity.

Soft-shell clams, quahogs and scallops occur to the east of Great Island Bridge, approximately 0.5 mile from the proposed project but within the impact area. We are concerned that turbidity generated during the dredging of the channel may impact these shellfish beds, especially during incoming tides. We understand that hydraulic dredging will most likely be the method used to deepen and widen the channels. This should minimize turbidity; however, as a safety precaution, we recommend the Corps establish monitoring stations near shellfish beds and eelgrass beds to insure that drifting silt and sand from the operation is not impacting these resources.

Bioassay and bulk sediment tests should be conducted on the dredged material to determine contaminant levels prior to selection of a beach disposal site. If the material is clean, we prefer the material be deposited onto Sand Hill Cove Beach rather than on East Matunuck State Beach. First, Sand Hill Cove Beach has undergone more serious erosion problems than East Matunuck State Beach. Secondly, the long shore drift of sand is from west to east. Therefore, any sand placed on East Matunuck State Beach would eventually drift back into the channel from which it was dredged. Material should be used to replace eroded beach and not to create new beach. Your planning process needs to pinpoint disposal of material found unsuitable for beach nourishment.

Impacts of the proposed project on winter flounder, tautog, white perch, bluefish, menhaden and striped bass should also be addressed during your planning process. Winter flounder is perhaps the most important finfish in Point Judith Harbor. This species begins migration into the harbor in mid-October prior to spawning which occurs between December and late-March. Most of the fish leave the harbor in April. According to the Rhode Island Department of Environmental Management, no known flounder spawning grounds occur in the project impact area although it may serve as a nursery area.

According to the Rhode Island Department of Fish and Wildlife, bufflehead, red-breasted merganser, and white-winged scoter are the primary wintering waterfowl near Little Comfort Island. The area is also used to a lesser degree by mallard, black duck, Canada goose, and brant. These species need to be addressed as well in your planning process since some of these birds may be displaced if your dredging operation extends into late fall or early winter.

Please contact Ron Joseph of my staff if we can be of further assistance.

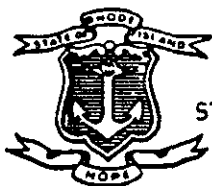
Sincerely yours,

*Gordon E. Beckett*

Gordon E. Beckett  
Supervisor  
New England Area

CC: RO/Ha Reading File  
WFS, Sue Mello  
EPA, Tom Addison  
Art Ganz, RI DEH  
Jo Horowitz, CE  
ES: RJos:jd:8-22-86:834-4411





STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

HISTORICAL PRESERVATION COMMISSION

Old State House  
150 Benefit Street  
Providence, R.I. 02903  
(401) 277-2678

August 13, 1986

Mr. Joseph L. Ignazio  
Chief, Planning Division  
Impact Analysis Branch  
Army Corps of Engineers  
424 Trapelo Road  
Waltham, MA 02254

Dear Mr. Ignazio:

Thank you for your letter of 6 August 1986 requesting Rhode Island State Historic Preservation Officer's comments on proposed improvements to navigation channels at Point Judith. In accordance with the Procedures of the Advisory Council on Historic Preservation (36 CFR 800) the proposed undertaking will have no effect on significant historic or cultural resources. Therefore, we have no objections.

Very truly yours,

*fr* *Vignia A. Fitch*  
Edward F. Sanderson  
Executive Director  
Deputy State Historic  
Preservation Officer

/aa



DEPARTMENT OF THE ARMY  
NEW ENGLAND DIVISION, CORPS OF ENGINEERS  
424 TRAPELO ROAD  
WALTHAM, MASSACHUSETTS 02254

August 6, 1986

REPLY TO  
ATTENTION OF

Planning Division  
Impact Analysis Branch

Mr. Edward Sanderson  
Rhode Island Historic Preservation Commission  
150 Benefit Street  
Providence, Rhode Island 02903

Dear Mr. Sanderson:

Enclosed is a map illustrating a proposed navigation project in Point Judith, Rhode Island. At present, our planning efforts involve an evaluation of the following: 1) widening of the existing 15 feet deep west bulkhead channel from 150 to 200 feet, 2) continuation of the west bulkhead channel into the north basin at a depth of 10 feet and width of 150 feet, 3) widening and deepening of the west channel from State Pier No. 4 to High Point from 100 feet to 150 feet and 6 feet to 15 feet respectively, and 4) placement of suitable dredged material along Sand Hill Cove and/or East Manuntuck State Beach.

Please review this material and send our office any comments you have regarding the presence of historic or prehistoric resources in the project area. If you need further information or have any questions, please contact Ms. Marianne Matheny at (617) 647-8140.

Sincerely,

Joseph L. Ignazio  
Chief, Planning Division

Enclosure

cc:  
Ms. Matheny  
Mr. Hubbard  
Mr. Adams-CDB  
Mr. Rubin  
Mr. Pronovost  
IAB Files  
Reading Files  
Plng Div Files



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Environmental Management  
DIVISION OF PLANNING AND DEVELOPMENT  
NATURAL HERITAGE PROGRAM

22 Hayes Street, Room 122  
Providence, R. I. 02908

Joseph Ignazio  
Chief, Planning Division  
Dept. of Army/C.O.E.  
424 Trapelo Road  
Waltham, MA 02254-9149

18 July 1986

Mr. Ignazio,

Thank you for the maps and photos of the dredge spoil deposition proposal at Point Judith, RI and sorry that this response has been so long in coming.

I see no Piping Plover conflict with this operation at Sand Hill Cove or at East Matunuck State Beach. The only remaining Piping Plover nesting habitat in this area is at East Matunuck State Beach, in the area west of the existing gravel parking lot (which itself is west of the pavilion). Please insure that no material is placed in this area (see accompanying map). If the idea is to build dunes in the vicinity of E. Matunuck pavilion and west south of the gravel parking lot, this project will have no impact on Piping Plovers. One pair of Plovers (no young fledged) nested west of the gravel parking lot during 1985 (not present, 1986), and this area has historically supported one of RI's best Least Tern colonies (present, 30 adults, 1986).

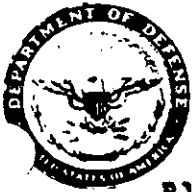
Again, I suggest that no dredged material be deposited in this area, and do not think the idea of creating Piping Plover habitat using this spoil is feasible at this time.

Best,

*Chait*

Christopher Raithel  
Natural Resource Specialist

cc: Ron Joseph (US Fish and Wildlife Service)  
Jim Myers (RI F&W)  
John Cronan (RI F&W)



DEPARTMENT OF THE ARMY  
NEW ENGLAND DIVISION, CORPS OF ENGINEERS  
424 TRAPELO ROAD  
WALTHAM, MASSACHUSETTS 02254  
June 18, 1986

REPLY TO  
ATTENTION OF  
Planning Division  
Impact Analysis Branch

Department of Environmental Management  
Division of Coastal Resources  
State of Rhode Island and Providence Plantations  
ATTN: James Beattie  
60 Davis Street  
Providence, Rhode Island 02908

Dear Mr. Beattie:

This is in reference to the preparation of an environmental assessment for proposed navigation improvements in Point Judith at Narragansett and South Kingston, Rhode Island.

At present, our planning efforts involve an evaluation of the following: 1) widening of the existing 15 feet deep west bulkhead channel from 150 to 200 feet, 2) continuation of the west bulkhead channel into the north basin at a depth of 10 feet and width of 150 feet, 3) widening and deepening of the west channel from State Pier No. 4 to High Point from 100 feet to 150 feet and 6 feet to 15 feet respectively, and 4) placement of suitable dredged material along Sand Hill Cove and/or East Manuntuck State Beach. A project location plan has been enclosed for your information.

One purpose of the Detailed Project Study is to identify the affected environment, potential environmental impacts and concerns of Federal, State and local agencies with jurisdiction by law or environmental expertise. This information will be evaluated and incorporated in our environmental assessment. As a result, we are requesting that the Division of Coastal Resources provide comments on the proposed navigation improvement project.

Should you have any questions concerning this matter, please contact Mr. William A. Hubbard, Environmental Resources Section, Planning Division, at 617-647-8236.

Sincerely,

Joseph L. Ignazio  
Chief, Planning Division

Enclosure

cc:

Ms. Demos  
Mr. Bellmer  
IAB Files  
Plng Div Files

Mr. Hubbard  
Mr. Pronovost  
Reading Files



DEPARTMENT OF THE ARMY  
NEW ENGLAND DIVISION, CORPS OF ENGINEERS  
424 TRAPELO ROAD  
WALTHAM, MASSACHUSETTS 02254

June 5, 1986

REPLY TO  
ATTENTION OF

Planning Division  
Impact Analysis Branch

Mr. Gordon Beckett  
U.S. Fish and Wildlife Service  
Ecological Services  
P.O. Box 1518  
Concord, New Hampshire 03301-1518

Dear Mr. Beckett:

The purpose of this letter is to initiate coordination under the Fish & Wildlife Coordination Act for the proposed Point Judith Harbor - Section 107 project in Rhode Island during the Fiscal Year 1986.

The tasks for the proposed Point Judith project include the (1) widening of the existing 15 foot deep west bulkhead channel in Galilee from 150 feet to 200 feet width; (2) continuation of the west bulkhead channel into the north basin at Galilee at a depth of 10 feet and width of 150 feet; (3) widening the west channel in Jerusalem, from the state piers to High Point, from 100 feet wide to 150 feet wide deepening from 6 feet deep to 15 feet deep. Incremental depth alternatives of 12 feet and 18 feet in the Federal channels may be utilized as a cost effective measure to accommodate navigational requirements.

At present, three disposal sites are under consideration for the disposal of dredged material. They include an upland site and two beach sites, East Matunuck State Beach and Sand Hill Cove Beach east of Galilee. One hundred forty thousand cubic yards of dredged material, composed mainly of sand, will be deposited at one or more of the described sites.

- 2 -

A meeting will be coordinated with U.S. Fish and Wildlife Services and U.S. Army Corps of Engineers within the next two weeks. If you have any questions concerning the proposed project, please feel free to contact one of the following individuals:

Collis Adams (Project Manager) - FTS 839-7549  
William A. Hubbard (Marine Ecologist) - FTS 839-7236.

Sincerely,

Joseph L. Ignazio  
Chief, Planning Division

cc:

Mr. Demos  
Mr. Hubbard  
Mr. Adams-114S  
Mr. Bellmer  
Mr. Pronovost  
IAB Files  
Reading Files  
Pino Div Files



DEPARTMENT OF THE ARMY  
NEW ENGLAND DIVISION, CORPS OF ENGINEERS  
424 TRAPELO ROAD  
WALTHAM, MASSACHUSETTS 02254

REPLY TO  
ATTENTION OF

May 30, 1986

Planning Division  
Impact Analysis Branch

Mr. Chris Raithel  
Division of Fish and Wildlife  
Government Center  
Tower Hill Road  
Wakefield, Rhode Island 02879

Dear Mr. Raithel:

This letter is in response to a recent telephone conversation (Friday, May 23) between yourself and Cathy Demos, of my staff, concerning the disposal of dredged material on potential piping plover habitat. At that time you indicated that there are no known nests in the area. Enclosed please find a map and photograph of the proposed dredge and disposal site on Point Judith to help identify this site.

One hundred forty thousand cubic yards of dredged material (mostly sand) will be deposited on East Matunuck State Beach and possibly also east of Galilee on Sand Hill Cove State Beach. The dredged material will be deposited between December 15 and April 1. Please comment on dredged material disposal impact on piping plover or any other relevant resource.

If you have any questions or comments, please call Ms. Demos at FTS 839-7142.

Sincerely,

Joseph L. Ignazio  
Chief, Planning Division

cc:  
Ms. Demos  
Mr. Bellmer  
Mr. Pronovost  
IAB Files  
Reading Files  
Plng Div Files





STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Environmental Management  
OFFICE OF ENVIRONMENTAL COORDINATION  
~~XXXXXXXX~~ 9 Hayes Street  
Providence, R.I. 02903

May 14, 1986

Mr. Joseph L. Ignazio  
Chief, Planning Division  
Department of the Army  
NE Division  
424 Trapelo Road  
Waltham, MA 02254-9149

Dear Mr. Ignazio:

This letter is in response to your request for information as part of the Detailed Project Study for the proposed navigation improvements in Point Judith at Narragansett and South Kingstown.

There has been no extensive effort to characterize the sediments of Point Judith Pond; however, the available data suggests there are not significant concentrations of toxic substances in the sediment. Four surface sediment samples were taken by the Corps of Engineers. The exact locations of these samples were not reported; however, three samples qualified as Class I and one sample qualified as Class II sediment type (Seavey and Pratt, Marine Technical Report 72). Obviously, a site specific characterization of the sediments is necessary to assess the environmental impacts of the proposed maintenance dredging operation in Point Judith Pond.

The tidal currents in the southern part of the pond are substantially greater than in the portion south of Ram Island. In the lower pond and Harbor of Refuge strong tidal currents of 1 to 3 knots progress north and south every 12 hours. These currents are complex with significant lags between flood water at the breachway and flood water in various coves. Such lags occur between

East Pond and the Harbor and Potter and Point Judith creating particularly conservative circulation patterns in Potter Pond and East Pond (SAMP for Salt Pond Region). The daily exchange between the southern region and the Sound is approximately 5 percent of the volume of waters in the southern portion of the pond (CRMC, Special Area Management Plan for the Salt Pond Region).

Dredging operations at the head of Point Judith Pond will disperse suspended sediments into Point Judith and Potters Pond as well as Block Island Sound. The increase in suspended solid concentrations in the waters of Potters Pond, East Pond and other areas with poor circulation will likely depress dissolved oxygen levels and deposit a layer of fine sediments. Natural areas potentially impacted, as a result of the pond's hydrological characteristics include Galilee Bird Sanctuary and Succotash Marsh. Both marshes are critical wildlife habitats made especially so by the development of the port facilities at Galilee and Jerusalem and the destruction of salt marshes at the mouth of the pond. Scheduling the dredging operations at a time when both productivity and water temperatures are low will minimize the impact to plant and animal life.

The waters at the mouth of Point Judith Pond and adjacent to Snug Harbor are classified as SB. The remaining waters potentially impacted by the dredging operations, including Point Judith and Potters Ponds and Block Island Sound are Class SA.

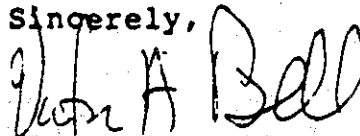
The Salt Pond Special Area Management Plan (CRMC, 1984) identified the northern portion of Point Judith Pond and the waters off Harbor Island as important Winter flounder spawning and feeding grounds. CRMC recommends that all dredging should be avoided during the winter flounder spawning season from January through March.

Over the past decade, Point Judith Pond has supported various commercial fisheries, including winter flounder, eel, scallop and quahog. The lower pond is also a popular recreational fishing area. The fish stocks and the related commercial fisheries have undergone wide fluctuations over the years. These fluctuations are indicative of the fragile ecosystem of the salt ponds.

A major concern of CRMC as expressed in the Salt Pond Special Area Management Plan is the prevention of water quality degradation and the maintenance of viable fish and shellfish populations in Point Judith Pond. The specifications set by CRMC for dredging operations in the pond are designed to maintain its ecological balance and are supported by DEM. The proposed navigational improvements in Point Judith Pond as specified in your letter of April 9, 1986 are compatible with these recommendations.

If you have any questions regarding these comments, please feel free to call me.

Sincerely,



Victor A. Bell  
Chief

VAB:lmh  
L2VB



# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
ECOLOGICAL SERVICES  
P.O. BOX 1518  
CONCORD, NEW HAMPSHIRE 03301

Joseph Ignazio, Chief  
Planning Division  
New England Division, Corps of Engineers  
424 Trapelo Road  
Waltham, Massachusetts 02254

MAY 07 1966

Dear Mr. Ignazio:

This responds to your April 28, 1966 request for information on the presence of Federally listed and proposed endangered or threatened species within the impact area of a proposed small boat navigation project at Narragansett and South Kingston, Rhode Island.

Our review shows that piping plovers, a Federally listed threatened species may exist at one of your proposed disposal sites. Plovers have nested at East Matunuck State Beach in South Kingston in the last several years. Therefore, the needs of this species must be addressed in your Biological Assessment before suitable dredged material is placed at East Matunuck State Beach.

Furthermore, we suggest you contact Mr. Chris Raithel of the Rhode Island Department of Fish and Wildlife for site specific information on piping plovers. We look forward to reviewing your Biological Assessment of this project.

This response relates only to endangered species under our jurisdiction. It does not address other legislation or our concerns under the Fish and Wildlife Coordination Act.

A list of Federally designated endangered and threatened species in Rhode Island is enclosed for your information. Thank you for your cooperation and please contact us if we can be of further assistance.

Sincerely yours,

Enclosure

Gordon E. Beckett  
Supervisor  
New England Area

FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES  
IN RHODE ISLAND

Common Name	Scientific Name	Status	Distribution
<u>FISHES:</u>			
Surgeon, shortnose*	<u>Acipenser brevirostrum</u>	E	Atlantic Coastal Waters
<u>REPTILES:</u>			
Turtle, green*	<u>Chelonia mydas</u>	T	Oceanic straggler in Southern New England
Turtle, hawksbill*	<u>Eretmochelys imbricata</u>	E	Oceanic straggler in Southern New England
Turtle, leatherback*	<u>Dermochelys coriacea</u>	E	Oceanic summer resident
Turtle, loggerhead*	<u>Caretta caretta</u>	T	Oceanic summer resident
Turtle, Atlantic ridley*	<u>Lepidochelys kempii</u>	E	Oceanic summer resident
<u>BIRDS:</u>			
Eagle, bald	<u>Haliaeetus leucocephalus</u>	E	Entire state
Falcon, American peregrine	<u>Falco peregrinus anatum</u>	E	Entire state-reestablishment to former breeding range in progress
Falcon, Arctic peregrine	<u>Falco peregrinus tundrius</u>	E	Entire state migratory-no nesting
Plover, Piping	<u>Charadrius melodus</u>	T	Entire State - nesting habitat
<u>MAMMALS:</u>			
Cougar, eastern	<u>Felis concolor cougar</u>	E	Entire state - may be extinct
Whale, blue*	<u>Balaenoptera musculus</u>	E	Oceanic
Whale, finback*	<u>Balaenoptera physalus</u>	E	Oceanic
Whale, humpback*	<u>Megaptera novaeangliae</u>	E	Oceanic
Whale, right*	<u>Eubalaena spp. (all species)</u>	E	Oceanic
Whale, sei*	<u>Balaenoptera borealis</u>	E	Oceanic
Whale, sperm*	<u>Physeter catodon</u>	E	Oceanic
<u>MOLLUSKS:</u>			
NONE			
<u>PLANTS:</u>			
Small Whorled Pogonia	<u>Isotria medeoloides</u>	E	Providence, Kent Counties

\* Except for sea turtle nesting habitat, principal responsibility for these species is vested with the National Marine Fisheries Service

Rev. 2/11/86



DEPARTMENT OF THE ARMY  
NEW ENGLAND DIVISION, CORPS OF ENGINEERS  
424 TRAPELO ROAD  
WALTHAM, MASSACHUSETTS 02254

BRIDGE/et/7137

April 29, 1986

REPLY TO  
ATTENTION OF

Planning Division  
Impact Analysis Branch

Mr. Douglas Beach  
National Marine Fisheries Service  
Habitat Protection Branch  
14 Elm Street  
Gloucester, Massachusetts 01930

Dear Mr. Beach:

We are proposing to conduct a Section 107, Small Boat Navigation Project, at Narragansett and South Kingston, Rhode Island in Point Judith Pond. The purpose of this letter is to request a list of endangered or threatened species for the project area, pursuant to Section 7(c) of the Endangered Species Act of 1973, as amended. Please find enclosed a location map of the area to aid you in your work.

The proposed project involves (1) widening of the existing 15 feet deep west bulkhead channel from 150 feet to 200 feet, (2) continuation of the west bulkhead channel into the north basin at a depth of 10 feet and width of 150 feet (3) widening and deepening of the west channel from State Pier No. 4 to High Point from 100 feet to 150 feet and 6 feet to 18 feet, respectively, and (4) placement of suitable dredged material along Sand Hill Cove and/or East Matunuck State Beach.

If you require any further information about the proposed project or the effected area please contact Mr. Russ Bellmer of the Impact Analysis Branch at PTS 839-7142.

Sincerely,

Joseph L. Ignazio  
Chief, Planning Division

Enclosure  
cc:  
Mr. Bridge  
Mr. Bellmer  
Mr. Pronovost  
Plng Div File  
Reading File



DEPARTMENT OF THE ARMY  
NEW ENGLAND DIVISION, CORPS OF ENGINEERS  
424 TRAPELO ROAD  
WALTHAM, MASSACHUSETTS 02254

April 9, 1986

REPLY TO  
ATTENTION OF

Planning Division  
Impact Analysis Branch

RI Department of Administration  
Office of State Planning  
ATTN: Mr. Daniel W. Varin, Chief  
265 Melrose Street  
Providence, Rhode Island 02903

Dear Mr. Varin:

This is in reference to a Detailed Project Study pursuant to Section 107 of the 1960 River and Harbor Act concerning the preparation of an environmental assessment for proposed navigation improvements in Point Judith Pond at Warragansett and South Kingstown, Rhode Island.

At present, our planning efforts involve an evaluation of the following: (1) widening of the existing 15 ft. deep west bulkhead channel from 150 ft. to 200 ft., (2) continuation of the west bulkhead channel into the north basin at a depth of 10 ft. and width of 150 ft., (3) widening and deepening of the west channel from State Pier No. 4 to High Point from 100 ft. to 150 ft. and 6 ft. to 15 ft., respectively, and (4) placement of suitable dredged material along Sand Hill Cove and/or East Matunuck State Beach. A project location plan has been enclosed for your information. One purpose of the Detailed Project Study is to identify the affected environment, potential environmental impacts and concerns of Federal, State and local agencies with jurisdiction by law or environmental expertise. This information will be evaluated and incorporated in our environmental assessment.

As a result, we are requesting that the Office of State Planning provide comments regarding the relationship of statewide, land use planning issues to the proposed navigation improvement project.

Please provide any comments or information within 45 days from the date of this letter. Should you have any questions concerning this matter, please contact Mr. Jeffrey A. Bridge, Environmental Resources Section, Planning Division at 617-647-8137.

Sincerely,

Joseph L. Ignazio  
Chief, Planning Division

Enclosure

Copy Furnished:  
Office of State Planning  
ATTN: Lee Whitaker  
265 Melrose Street  
Providence, Rhode Island 02903

Mr. Bridge	Mr. Bellmer
Mr. Pronovost	IAB Files
Reading Files	Plng Div Files





DEPARTMENT OF THE ARMY  
NEW ENGLAND DIVISION, CORPS OF ENGINEERS  
424 TRAPELO ROAD  
WALTHAM MASSACHUSETTS 02254

REPLY TO  
ATTENTION OF

April 9, 1986

Planning Division  
Impact Analysis Branch

RI Department of Environmental Management  
Office of Environmental Coordination  
ATTN: Mr. Victor Bell, Chief  
9 Hayes Street  
Providence, Rhode Island 02908

Dear Mr. Bell:

This is in reference to a Detailed Project Study pursuant to Section 107 of the 1960 River and Harbor Act concerning the preparation of an environmental assessment for proposed navigation improvements in Point Judith Pond at Narragansett and South Kingstown, Rhode Island.

At present, our planning efforts involve an evaluation of the following: (1) widening of the existing 15 ft. deep west bulkhead channel from 150 ft. to 200 ft., (2) continuation of the west bulkhead channel into the north basin at a depth of 10 ft. and width of 150 ft., (3) widening and deepening of the west channel from State Pier No. 4 to High Point from 100 ft. to 150 ft. and 6 ft. to 15 ft., respectively, and (4) placement of suitable dredged material along Sand Hill Cove and/or East Matunuck State Beach. A project location plan has been enclosed for your information. One purpose of the Detailed Project Study is to identify the affected environment, potential environmental impacts and concerns of Federal, State and local agencies with jurisdiction by law or environmental expertise. This information will be evaluated and incorporated in our environmental assessment.

As a result, we are requesting that the Department of Environmental Management provide any information regarding the following areas of interest in order to incorporate the State's comments in our assessment; (1) fish and wildlife resources, (2) wetlands, (3) State threatened or endangered species, (4) water quality data, (5) unique natural areas and (6) state parks, recreation and conservation areas and wildlife refuges and sanctuaries.

Please provide any comments or information within 45 days from the date of this letter. Should you have any questions concerning this matter, please contact Mr. Jeffrey A. Bridge, Environmental Resources Section, Planning Division at 617-647-8137.

Sincerely,

Joseph L. Ignazio  
Chief, Planning Division

Enclosure

Mr. Bridge  
Mr. Pronovost  
Reading Files

Mr. Wallmer  
IAB Files  
Plng Div Files

Point Judith Pond  
Narragansett and South Kingston  
Rhode Island

Environmental Assessment  
Section II  
Section 404(b)(1) Evaluation

NEW ENGLAND DIVISION  
U.S. ARMY CORPS OF ENGINEERS, WALTHAM, MA  
SECTION 404(b)(1) EVALUATION

PROJECT: Point Judith Pond, Rhode Island

PROJECT MANAGER: Christopher L. Hatfield EXT. 7520

FORM COMPLETED BY: Terrence Fleming EXT. 7139

PROJECT DESCRIPTION:

The project is proposed to improve navigation in Galilee Harbor, Point Judith Pond, Narragansett, Rhode Island. The dredging involves the removal of approximately 22,400 cubic yards of silty material by hydraulic dredge. The dredged material will be transferred by pipeline to the states upland containment site for dewatering. After dewatering, the material will be removed for upland landfill.

NEW ENGLAND DIVISION  
U.S. ARMY CORPS OF ENGINEERS, WALTHAM, MA

PROJECT: Point Judith Pond, Rhode Island.

SHORT-FORM  
Evaluation of Section 404(b)(1) Guidelines

1. Review of Compliance (Section 230.10(a)-(d)).

Final

- a. The discharge represents the least environmentally damaging practicable alternative and if in a special aquatic site, the activity associated with the discharge must have direct access or proximity to, or be located in the aquatic ecosystem to fulfill its basic purpose (if no, see section 2 and information gathered for EA alternative);

☒ ☐  
YES NO

- b. The activity does not appear to:  
1) violate applicable state water quality standards or effluent standards prohibited under Section 307 of the CWA; 2) jeopardize the existence of Federally listed threatened and endangered species or their critical habitat; and 3) violate requirements of any Federally designated marine sanctuary (if no, see section 2b and check responses from resource and water quality certifying agencies);

☒ ☐  
YES NO

- c. The activity will not cause or contribute to significant degradation of waters of the U.S. including adverse effects on human health, life stages of organisms dependent on the aquatic ecosystem, ecosystem diversity, productivity and stability, and recreational, aesthetic, and economic values (if no, see section 2);

☒ ☐  
YES NO

- d. Appropriate and practicable steps have been taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem (if no, see section 5).

☒ ☐  
YES NO

2. Technical Evaluation Factors (Subparts C-F).

N/A      Not  
Signif-    Signif-  
icant      icant

a. Potential Impacts on Physical and Chemical Characteristics of the Aquatic Ecosystem (Subpart C).

- 1) Substrate.
- 2) Suspended particulates/turbidity.
- 3) Water.
- 4) Current patterns and water circulation.
- 5) Normal water fluctuations.
- 6) Salinity gradients.

	X	
	X	
	X	
	X	
	X	
	X	

b. Potential Impacts on Biological Characteristics of the Aquatic Ecosystem (Subpart D).

- 1) Threatened and endangered species.
- 2) Fish, crustaceans, mollusks and other aquatic organisms in the food web.
- 3) Other wildlife.

	X	
	X	
	X	

c. Potential Impacts on Special Aquatic Sites (Subpart E).

- 1) Sanctuaries and refuges.
- 2) Wetlands.
- 3) Mud flats.
- 4) Vegetated shallows.
- 5) Coral reefs.
- 6) Riffle and pool complexes.

	X	
	X	
	X	
	X	
X		
X		

d. Potential Effects on Human Use Characteristics (Subpart F).

- 1) Municipal and private water supplies.
- 2) Recreational and Commercial fisheries.
- 3) Water-related recreation.
- 4) Aesthetics.
- 5) Parks, national and historic monuments, national seashores, wilderness areas, research sites, and similar preserves.

	X	
	X	
	X	
	X	
	X	

3. Evaluation and Testing (Subpart G).

- a. The following information has been considered in evaluating the biological availability of possible contaminants in dredged or fill material. (Check only those appropriate.)

- |   |                                     |
|---|-------------------------------------|
| 1) Physical characteristics.....  | <input checked="" type="checkbox"/> |
| 2) Hydrography in relation to<br>known or anticipated<br>sources of contaminants.....   | <input type="checkbox"/>            |
| 3) Results from previous<br>testing of the material or<br>similar material in the<br>vicinity of the project.....   | <input type="checkbox"/>            |
| 4) Known, significant sources<br>of persistent pesticides<br>from land runoff or<br>percolation.....  | <input type="checkbox"/>            |
| 5) Spill records for petroleum<br>products or designated hazardous<br>substances (Section 311 of CWA).....  | <input type="checkbox"/>            |
| 6) Public records of significant<br>introduction of contaminants from<br>industries, municipalities, or other sources.....  | <input type="checkbox"/>            |
| 7) Known existence of substantial<br>material deposits of substances<br>which could be released in harmful<br>quantities to the aquatic environment<br>by man-induced discharge activities..... | <input type="checkbox"/>            |
| 8) Other sources (specify).....   | <input checked="" type="checkbox"/> |

List appropriate references.

Chemical Analysis of Bulk Sediment  
Elutriate Test  
EP toxicity test

- b. An evaluation of the appropriate information in 3a above indicates that there is reason to believe the proposed dredge or fill material is not a carrier of contaminants, or that levels of contaminants are substantively similar at extraction and disposal sites and not likely to require constraints. The material meets the testing exclusion criteria.

<input checked="" type="checkbox"/>	<input type="checkbox"/>
YES	NO

4. Disposal Site Delineation (Section 230.11(f)).

a. The following factors, as appropriate, have been considered in evaluating the disposal site.

- |  |                                     |
|--|-------------------------------------|
| 1) Depth of water at disposal site.....  | <input type="checkbox"/>            |
| 2) Current velocity, direction, and<br>variability at disposal site.....   | <input type="checkbox"/>            |
| 3) Degree of turbulence.....   | <input type="checkbox"/>            |
| 4) Water column stratification.....  | <input type="checkbox"/>            |
| 5) Discharge vessel speed and<br>direction.....  | <input type="checkbox"/>            |
| 6) Rate of discharge.....  | <input checked="" type="checkbox"/> |
| 7) Dredged material characteristics<br>(constituents, amount, and type<br>of material, settling velocities)..... | <input checked="" type="checkbox"/> |
| 8) Number of discharges per unit of<br>time.....   | <input checked="" type="checkbox"/> |
| 9) Other factors affecting rates and<br>patterns of mixing (specify).....  | <input type="checkbox"/>            |

List appropriate references. See Environmental Assessment

b. An evaluation of the appropriate factors in  
4a above indicates that the disposal site  
and/or size of mixing zone are acceptable.....

<input type="checkbox"/>	<input type="checkbox"/>
YES	NO

5. Actions To Minimize Adverse Effects (Subpart H).

All appropriate and practicable steps have been taken,  
through application of recommendation of Section  
230.70-230.77 to ensure minimal adverse effects of  
the proposed discharge.....

<input checked="" type="checkbox"/>	<input type="checkbox"/>
YES	NO*

List actions taken.

Dredging operations will be scheduled to take place  
within RIDEM's April 1 through May 30 and August 30  
through November 15 dredging windows

Dredging will be done with a hydraulic dredge.



6. Factual Determination (Section 230.11).

A review of appropriate information as identified in items 2 - 5 above indicates that there is minimal potential for short or long term environmental effects of the proposed discharge as related to:

- a. Physical substrate  
(review sections 2a, 3, 4, and 5 above). YES ☒ NO ☐
- b. Water circulation, fluctuation and salinity  
(review sections 2a, 3, 4, and 5). YES ☒ NO ☐
- c. Suspended particulates/turbidity  
(review sections 2a, 3, 4, and 5). YES ☒ NO ☐
- d. Contaminant availability  
(review sections 2a, 3, and 4). YES ☒ NO ☐
- e. Aquatic ecosystem structure, function  
and organisms (review sections 2b and  
c, 3, and 5) YES ☒ NO ☐
- f. Proposed disposal site  
(review sections 2, 4, and 5). YES ☒ NO ☐
- g. Cumulative effects on the aquatic  
ecosystem. YES ☒ NO ☐
- h. Secondary effects on the aquatic  
ecosystem. YES ☒ NO ☐

7. Findings of Compliance or non-compliance.

The proposed disposal site for discharge of dredged or fill material complies with the Section 404(b) (1) guidelines..... ☒

8 September 1989

DATE



DANIEL M. WILSON  
Colonel, Corps of Engineers  
Division Engineer

Point Judith Pond  
Narragansett and South Kingston  
Rhode Island

Environmental Assessment  
Section III  
Finding of No Significant Impact

### III. Finding of No Significant Impact


The dredging and upland disposal of approximately 22,400 cubic yards silty material from the North Basin area of Point Judith Pond has been determined to impart no significant impact on the harbor ecosystem.

This assessment has been prepared in accordance with the National Environmental Policy Act of 1969 and all applicable environmental statutes and executive orders. My determination that an Environmental Impact Statement is not required is based upon the information contained in the Environmental Assessment and the following considerations:

- a. The project will not affect any State or Federal rare, threatened or endangered species pursuant to the Endangered Species Act.
- b. Based on physical and chemical analyses, the material in the project area will have no significant adverse effect upon existing water quality in the dredging or disposal areas. Disposal site management techniques will be implemented as described in the Environmental Assessment and Section 404(b)(1) Evaluation.
- c. A temporary impact will be caused by removal of benthic organisms from the Federal channel by dredging operations. These organisms will be replaced by recolonization from adjacent areas and larval recruitment within a year.
- d. As a result of coordination with the State Historic Preservation Office, it has been determined that no cultural resources will be impacted by the proposed dredging or disposal.

Based on my review and evaluation of the environmental effects as presented in the environmental assessment, I have determined that this Point Judith Harbor improvement dredging project is not a major Federal action significantly affecting the quality of the human environment. Therefore, this action is exempt from requirements to prepare an environmental impact statement.

8 September 1989  
-----  
Date

  
-----  
Daniel M. Wilson  
Colonel, Corps of Engineers  
Division Engineer

## **APPENDIX 2**

**ENGINEERING INVESTIGATIONS,  
DESIGN AND COST ESTIMATES**

## APPENDIX 2

### ENGINEERING INVESTIGATIONS, DESIGN AND COST ESTIMATES

#### TABLE OF CONTENTS

<u>Item</u>	<u>Page No.</u>
INTRODUCTION	2-iii
<u>SECTION A</u>	
<u>ENGINEERING INVESTIGATIONS</u>	
DESCRIPTION OF PROJECT AREA	2-1
FIELD INVESTIGATIONS	2-1
Hydrographic Surveys	2-1
Subsurface Investigations	2-1
Nature of Material to be Removed	2-2
Sediment Analysis	2-2
Channel and Anchorage Cross-Sections	2-11
QUANTITY ESTIMATES	2-11
<u>SECTION B</u>	
<u>DESIGN AND COST ESTIMATES</u>	
ANALYSIS OF PLANS	2-13
Quantities of Material to be Removed	2-13
Cost Estimates	2-13
Plan A (West Bulkhead)	2-14
Plan B (North Basin)	2-15
Plan A + B	2-17
Plan C1 (Jerusalem)	2-18
Plan C2 (Jerusalem)	2-19
Selected Plan	2-20
AIDS TO NAVIGATION	2-20
DISPOSAL OF DREDGED MATERIAL	2-20
MAINTENANCE COSTS	2-21
ANNUAL CHARGES	2-23

## LIST OF TABLES

<u>Table No.</u>		<u>Page No.</u>
2-1	Sediment Samples - Physical Data- Environmental Sampling	2-3
2-2	EP Toxicity Testing	2-6
2-3	Elutriate Testing (Sample Site B)	2-7
2-4	Elutriate Testing - PCB Results - Sample Sites A and C	2-8
2-5	Beach Sand Particle Size Analysis	2-9
2-6	Quantities of Material to be Removed	2-12
2-7	Cost Estimates - Plan A - (15-foot)	2-14
2-8	Cost Estimates - Plan B - (10-foot)	2-15
2-9	Cost Estimates - Plan A + B (15 & 10-foot)	2-17
2-10	Cost Estimates - Plan C1 - (15-foot)	2-18
2-11	Cost Estimates - Plan C2 - (12-foot)	2-19
2-12	Maintenance Dredging Costs	2-22
2-13	Summary of Annual Charges	2-23

## LIST OF FIGURES

<u>Figure No.</u>	
2-1	Hydrographic Survey - Point Judith Pond - 1985
2-2	Location of Sediment Sample Sites
2-3A thru L	Sediment Grain Size Curves - Environmental Sampling From Project Area
2-4A thru F	Sediment Grain Size Curves - Environmental Sampling From Local Beaches
2-5	Dredge Material Data - Settling Curve
2-6	Typical Cross Sections
2-7	Location of Typical Cross Sections
2-8	Alternative Plans of Improvement
2-9	Recommended Plan of Improvement

APPENDIX 2  
ENGINEERING AND INVESTIGATIONS  
DESIGN AND COST ESTIMATES

INTRODUCTION

This appendix contains two sections. Section A outlines the various field activities and investigations conducted during the course of the detailed study. Section B provides a detailed engineering analysis of the various alternative Federal plans based on those investigations described in Section A.

## SECTION A

### ENGINEERING INVESTIGATIONS

#### DESCRIPTION OF PROJECT AREA

This Point Judith Pond Small Navigation Project is located in the lower Pond area in the towns of South Kingston and Narragansett, Rhode Island. This southern shore area of Rhode Island from Watch Hill near the Connecticut state line eastward to Point Judith at the entrance to Narragansett Bay, a distance of about 20 miles, constitutes one of the most extensive coastal sand deposits in New England.

What was once a large sand plain in this area became submerged, and over a period of time marine forces eroded indentations and lagoons between the more resistant headlands of terminal moraine. Sand beaches and dunes occur between the headlands where glacial sands have been retained. Behind the beaches and lagoons is the more resistant deposit of boulders and till known as the Harbor Hill moraine. Watch Hill forms the westernmost headland of the exposed string of beaches and the Point Judith headland is the eastern promontory. Between these two prongs the sand stretches and is held seaward by the lesser headlands of Weekapaug, Quonochontaug, Green Hill and Matunuck Point.

Point Judith Pond, one of the tidal lagoons formed in this low lying area, is dotted with islands and shoals. It extends approximately four miles inland and is about one mile wide. Natural depths average about three feet and are generally less than eight feet. The mean tide range is 3.0 feet in the Pond near the Breachway and 2.9 feet at Wakefield. Maximum tidal currents average 2.7 knots through the entrance to the Pond.

#### FIELD INVESTIGATIONS

Field investigations were conducted during the detailed study to determine the ground surface elevation, type and composition of substrate, and other physical characteristics which would effect plan formulation. This work included hydrographic surveys and sediment analysis. The base data obtained from these field investigations was used to develop and evaluate alternative plans of improvement.

#### HYDROGRAPHIC SURVEYS

A hydrographic condition survey of the lower portion of Point Judith Pond was conducted in October 1985 by Tibbetts Engineering Corporation. The results of this survey are shown in Figure 2-1.

#### SUBSURFACE INVESTIGATIONS

Twenty five borings were made by the Corps of Engineers in 1965 and 1966 for studying improvements to the navigation channel. The borings were 5 to 80 feet deep and mostly encountered silty or gravelly sands. Some organic silt layers were found at the surface and other silt and gravel layers up to 8 feet thick were found at depth. There were some indications that the top of the till layer is about 35 feet below the bottom of the lagoon. No bedrock was encountered.



Work recently done by the state of Rhode Island in the Port of Galilee involved dredging where nothing but sand and silt was encountered. More importantly sheet piling, placed to form a new bulkhead, was driven to a depth in excess of 120 feet and did not encounter bedrock. Based on these facts, it was deemed unnecessary to conduct additional subsurface explorations in the project area.

#### NATURE OF THE MATERIAL TO BE REMOVED

In order to determine the nature of the material to be removed under each plan, sediment samples were obtained from various locations in the project area and visually classified using the Unified Classification System. Some chemical testing was also done on some of the samples. The results of the physical and chemical testing revealed the dredged material to be fine sand and silts, uncontaminated and suitable for the proposed disposal methods.

#### Sediment Analysis

Samples were taken from 10 sites (A-J) in August 1985 in conjunction with the environmental sampling program. Samples A, B and C were taken as sediment cores. Samples D thru J were taken using grab sampling devices. Physical tests consisting of mechanical sieve, specific gravity and percent fines were conducted on all of these samples. In addition, chemical and EP Toxicity testing was performed on samples A, B, C and D. Elutriate testing was performed in 1986 on a new sample B and also on new samples A and C for PCB concentrations. The locations of the 10 sediment sample sites are shown in Figure 2-2. The results of the tests on the 1985 and 1986 samples are shown in Tables 2-1, 2-2, 2-3 and 2-4. Grain size distribution curves developed from mechanical analysis are shown in Figures 2-3A thru L.

As part of the study samples were taken from East Matunuck State Beach and Sand Hill Cove State Beach. These samples were taken in order to determine if the beach sand was consistent with the dredge material and if it could be used as a potential disposal site. The results of these tests are shown in Table 2-5. Grain size distribution curves developed from the mechanical analysis of these samples are shown in Figures 2-4A thru F.

During the course of the study it also became necessary to perform settlement tests on the channel sediments. The existing disposal site in Galilee is capable of handling 26,000 cubic yards of ordinary material. The proposed plan of improvement would remove 22,400 cubic yards of dredged material to this containment area. When the material is originally pumped to the site it is in a slurry form, taking up a much greater volume of the containment site. Due to the almost equal volumes of dredged material and containment area, a settling test was performed on the dredge material in order to refine the bulking factors and subsequently define the required containment volume. Two samples were taken at approximately locations A and E, with the settling test being conducted on sample A. This area contains the more fine material and would have a higher bulking factor. The settling curve is shown in Figure 2-5. The results of the test indicated rapid settling rates due to the coarse grained nature of the sediment. The bulking effect associated with these coarse grained sediments would not significantly increase the volume of the dredge material during the disposal activity. Therefore, the 26,000 cubic yard

TABLE 2-1  
POINT JUDITH POND, RHODE ISLAND  
AUGUST 1985  
PHYSICAL TEST RESULTS - MARINE SEDIMENT - ENVIRONMENTAL SAMPLES

<u>PARAMETERS</u>	<u>SITE A</u>		<u>SITE B</u>
VISUAL CLASSIFICATION	Dark gray-organic sandy clayey silt (OH)	Dark gray-organic sandy silty clay (OH) with shell fragments.	Dark gray-silty fine sand (SP-SM) with shell fragments
Depth (Feet)	0.0 - 1.0	1.0 - 2.0	0.0 - 1.7
Median Grain Size	0.0400	0.0130	0.1400
Specific Gravity	2.66	2.60	2.68
% Fines	55	80	10
% Solids	61.2	40.0	60.6
Liquid Limit	58	114	non-plastic
Plastic Limit	35	43	non-plastic
Plastic Index	23	71	non-plastic
% Volatile Solids-EPA	3.25	10.3	3.74
% Volatile Solids-NED	1.91	6.41	2.35

TABLE 2-1 (Cont'd)  
POINT JUDITH POND, RHODE ISLAND  
AUGUST 1985  
PHYSICAL TEST RESULTS - MARINE SEDIMENT - ENVIRONMENTAL SAMPLES

<u>PARAMETERS</u>	<u>SITE C</u>	<u>SITE D</u>
VISUAL CLASSIFICATION	Dark gray-organic silty fine sand (SM) with shell fragments.	Dark gray-silty fine Sand (SM)  Dark gray-silty, med- fine sand (SM) with shell fragments.
Depth (Feet)	0.0 - 0.50	0.50 - 1.4  Surface
Median Grain Size	.1300	.1200  .2200
Specific Gravity	2.66	2.65  2.68
% Fines	29	25  13
% Solids	69.3	67  20.9
Liquid Limit	35	non-plastic  non-plastic
Plastic Limit	30	non-plastic  non-plastic
Plastic Index	5	non-plastic  non-plastic
% Volatile Solids-EPA	2.19	2.16  1.90
% Volatile Solids-NED	1.29	1.20  0.63

TABLE 2-1 (Cont'd)  
 POINT JUDITH POND, RHODE ISLAND  
 AUGUST 1985  
PHYSICAL TEST RESULTS - MARINE SEDIMENT - ENVIRONMENTAL SAMPLES

<u>PARAMETERS</u>	<u>SITE E</u>	<u>SITE F</u>	<u>SITE G</u>	<u>SITE H</u>
VISUAL CLASSIFICATION	Grayish brown-med- fine sand (SP) with shell fragments	Grayish brown-med- fine sand (SP) with shell fragments	Grayish brown-med fine sand (SP) with shell fragments	Gray-med-fine sand (SP) with shell fragments
Depth (Feet)	Surface	Surface	Surface	Surface
Median Grain Size	0.3200	0.4000	0.4500	0.2800
Specific Gravity	2.69	2.68	2.67	2.68
% Fines	<1	<1	<1	<1
<u>PARAMETERS</u>	<u>SITE I</u>	<u>SITE J</u>		
VISUAL CLASSIFICATION	Gray-med-fine sand (SP) with trace of silt and organics	Light yellowish gray- med-fine sand (SP) with shell fragments		
Median Grain Size	0.2700	0.2200		
Specific Gravity	2.71	2.70		
% Fines	1	1		

TABLE 2-2  
EP Toxicity Test Results  
Point Judith, RI-1985 Sampling

<u>Substance</u>	<u>EPA Criteria ppm</u>	<u>Concentrations in sample extracts, ppm</u>			
		<u>Location</u>			
		<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
Arsenic	5.0	0.228	0.257	0.234	0.229
Barium	100.0	<0.1	<0.1	<0.1	<0.1
Cadmium	1.0	<0.01	<0.01	<0.01	<0.01
Chromium	5.0	<0.02	<0.02	<0.02	<0.02
Lead	5.0	<0.05	<0.05	<0.05	<0.05
Mercury	0.2	<0.005	<0.005	<0.005	<0.005
Selenium	1.0	0.19	0.26	0.18	0.19
Silver	5.0	<0.02	<0.02	<0.02	<0.02
Endrin	0.02	<0.01	<0.01	<0.01	<0.01
Lindane	0.4	<0.01	<0.01	<0.01	<0.01
Methoxychlor	10	<0.05	<0.05	<0.05	<0.05
Toxaphene	0.5	<0.05	<0.05	<0.05	<0.05
2, 4-D	10	<0.05	<0.05	<0.05	<0.05
Silvex	1.0	<0.05	<0.05	<0.05	<0.05

TABLE 2-3  
ELUTRIATE TESTING-Point Judith R.I 1986

Results of tests performed on: (1) the standard elutriate prepared from one part sediment taken at various sampling locations with four parts water from the dredging site and (2) water from the dredging site are as follows:

	Dredge Site Water	Standard Elutriate Designation and Sediment Depth Used in Preparation Location "B" 0.0-1.7 ft			EPA Criteria
		R1	R2	R3	
Nitrate/Nitrite Nitrogen (N), ppm	0.01	0.02	0.68	0.05	10 a)
Sulfate (SO <sub>4</sub> ), ppm	2410	2565	2264	2534	
Oil & Grease, ppm	0.3	1.12	0.32	0.3	
Phosphorus					
ortho, ppm	0.03	0.01	0.02	0.01	0.10 a)
total, ppm	0.08	0.07	0.08	0.10	0.10 a)
Mercury (Hg), ppb	<1	<1	<1	<1	2.1 b)
Lead (Pb), ppb	<2	<2	<2	<2	140 b)
Zinc (Zn), ppb	<15	<15	<15	<15	170 a)
Arsenic (As), ppb	<2	<2	<2	<2	360 b)
Cadmium (Cd), ppb	<1	<1	<1	<1	43 b)
Chromium (Cr), ppb	<1.2	1.2	1.2	<1.2	1,110 b)
Copper (Cu), ppb	4.3	2.6	9.0	10.5	2.9 b)
Nickel (Ni), ppb	2.4	<2	<2	<2	140 a)
Vanadium (V), ppb	<5	<5	<5	9	--
Total PCB, ppb	0.11	0.57	0.13	0.14	0.03 a)
Total DDT, ppb	<0.01	<0.01	<0.01	<0.01	0.13 a)

a) any one time

b) one hour average  
once every three years

TABLE 2-4  
Point Judith, RI  
PCB Results - Elutriate Testing  
July 1985

<u>Sample</u>	<u>Depth Range of Core, ft.</u>	<u>PCB, ppb</u>		
		<u>1</u>	<u>2</u>	<u>3</u>
"A"	0.0 - 0.7	<0.02	<0.02	<0.02
Location "A" Water			<0.02	
"C"	0.0 - 1.1	<0.02	<0.02	<0.02
Location "C" Water			<0.02	
Blank			<0.02	

TABLE 2-5  
BEACH SAND PARTICLE SIZE ANALYSIS  
NEW ENGLAND DIVISION, CORPS OF ENGINEERS  
RESULTS OF PHYSICAL TESTING  
Point Judith, RI 1986

Test	Field Log No./Sample Locations				
	100-449-1 A	100-449-2 B	100-449-3 C	100-449-4 D	100-449-5 E
Visual Classification	gray poorly graded sand (SP)	gray poorly graded sand (SP)	brown poorly graded sand (SP)	light brown poorly graded sand (SP)	gray poorly graded sand (SP)
Grain Size Curve					
Med (50% finer)	0.170	0.150	0.800	0.350	0.180
Q1 (75% finer)	0.210	0.180	1.800	0.480	0.230
Q3 (25% finer)	0.150	0.130	0.370	0.280	0.160
Soil Class/ Dominant	SP	SP	SP	SP	SP
Normal/Bimodal	N	N	N	N	N
% Coarse Mat'l (pass >#10 US Std Sieve)	<1	<1	20	<1	<1
% Medium Sand (pass #10 Sieve retained #40 Sieve)	8	5	48	28	5
% Fine Sand (pass #40 Sieve retained #200 US Std Sieve)	92	95	32	72	95
% Fines (silt/ clay) pass #200 Sieve	0	0	0	0	0
Specific Gravity					
pH					



TABLE 2-5 (CONT'D)  
NEW ENGLAND DIVISION, CORPS OF ENGINEERS  
RESULTS OF PHYSICAL TESTING

Test	Field Log No./Sample Locations
	100-449-6 F
Visual Classification	gray poorly graded sand (SP)
Grain Size Curve	
Med (50% finer)	0.180
01 (75% finer)	0.190
Q3 (25% finer)	0.150
Soil Class/ Dominant	SP
Normal/Bimodal	N
% Coarse Mat'l (pass >#10 US Std Sieve)	<1
% Medium Sand (pass #10 Sieve retained #40 Sieve)	6
% Fine Sand (pass #40 Sieve retained #200 US Std Sieve)	94
% Fines (silt/ clay) pass #200 Sieve	0
Specific Gravity	
pH	

facility in Galilee would be sufficient under the assumed operating conditions.

#### CHANNEL ANCHORAGE CROSS-SECTIONS

Data developed from the hydrographic survey and subsurface investigations were used to develop several representative cross-sections of the area selected for detailed study. In all areas a one foot allowable overdepth was assumed for ordinary material. Typical cross-sections for the areas to be dredged are shown in Figure 2-6, and the locations of these cross-sections appear in Figure 2-7.

#### QUANTITY ESTIMATES

In order to determine quantities of material to be removed under each plan, quantity estimates were developed for selected dredge depths chosen for detailed analysis. These incremental dredge quantities are shown in Table 2-6.

TABLE 2-6  
POINT JUDITH POND, RI  
QUANTITIES OF MATERIAL TO BE REMOVE  
ESTIMATED VOLUME TO BE REMOVED (CUBIC YARDS)

<u>Plan</u>	<u>Cut to Depth</u>	<u>Overdepth Increment</u>	<u>Total Volume</u>
Plan A - West Bulkhead			
Widening Alone			
15-Foot Channel			
(3 week constr. period)			
-Ordinary Material	6,900	2,100	9,000
-Rock	None	None	None
Plan B - North Basin			
Extension Alone			
8-Foot Channel			
(3 week constr. period)			
-Ordinary Material	2,600	2,600	5,200
-Rock	None	None	None
10-Foot Channel			
(3 week constr. period)			
-Ordinary Material	8,400	5,000	13,400
-Rock	None	None	None
12-Foot Channel			
(4 week constr. period)			
-Ordinary Material	18,000	6,500	24,500
-Rock	None	None	None
Plans A + B - Combined			
15 & 10-Foot Channels			
(4 week constr. period)			
-Ordinary Material	15,300	7,100	22,400
-Rock	None	None	None
Plan C1 - Jerusalem			
15-Foot Channel			
(13 week constr. period)			
-Ordinary Material	148,700	30,400	179,100
-Rock	None	None	None
Plan C2 - Jerusalem			
12-Foot Channel			
(6 week constr. period)			
-Ordinary Material	45,600	18,600	64,200
-Rock	None	None	None

## SECTION B

### DESIGN AND COST ESTIMATES

#### ANALYSIS OF PLANS

Three detailed plans were selected for study. Plan A involves widening the existing 150-foot wide federal channel, opposite the West Bulkhead in Galilee, to 200 feet. Plan B will be to extend the same channel 1200 feet, into the North Basin area, at a width of 150 feet. For the purpose of analysis three incremental depths of 8, 10 and 12 feet will be investigated. Since these two plans are both essential to the effectiveness of the state's improvement work in Galilee, a combination of these plans, Plans A & B, will also be analyzed. Economic analysis shows the 10-foot deep channel of Plan B maximizes benefits and will therefore be combined with Plan A for this plan. Plan C is to dredge a channel from Jerusalem to High Point in Snug Harbor. Two variations of this plan will be studied: a channel 15 feet deep and 150 feet wide and a channel 12 feet deep and 100 feet wide; titled "C1" and "C2" respectively. All three plans involve dredging ordinary material. In each case, the material would be removed by hydraulic dredge and pumped to the disposal site. Plan C would require the use of a booster pump. The disposal site for Plans A and B will be at the state's dewatering facility in Galilee while the disposal of the material from Plan C will be at East Matunuck State Beach. Costs provided include contingencies; monies for supervision and administration, engineering, and design. In order to accomplish the dredging and disposal of ordinary material under each plan, a typical construction plant consisting of the following equipment would be necessary: a Derrick barge, a 700 Horsepower hydraulic dredge, a 165 Horsepower launch, a 500 Horsepower booster pump (Plan C), a pipe barge (Plan C), and a front-end loader for moving the pipe on land. Construction periods including time for mobilization and demobilization are estimated to be three weeks for Plans A or B, four weeks for the combination of the two, thirteen weeks for Plan C1, and six weeks for Plan C2. All estimates are based on a 7 day work week with 24 hour work days. The alternative plans of improvement are shown in Figure 2-8.

#### QUANTITIES OF MATERIAL TO BE REMOVED

The quantities of material to be removed were calculated for each of the proposed dredge depths. The incremental dredged quantities are shown in Table 2-6 and are based on one foot of allowable dredge overdepth for ordinary material.

#### COST ESTIMATES

The cost estimates for dredging are based on the construction duration given in Table 2-6. The cost of disposing the material is not included in any plan due to the fact that these costs are being met by the State of Rhode Island. The costs shown in Table 2-7 through Table 2-11 are computed using January 1989 price levels.

TABLE 2-7  
POINT JUDITH POND, RI  
PLAN A (WEST BULKHEAD)  
FIRST COST OF FEDERAL IMPROVEMENT  
15-FOOT DEEP, 200-FOOT WIDE CHANNEL

*Dredging	
Ordinary material at \$12.45/cy	
9,000 cubic yards	\$ 112,000
Contingencies	23,000
Construction Cost	<u>\$ 135,000</u>
Engineering and Design	17,000
Supervision and Administration	20,000
TOTAL FIRST COST	<u>\$ 172,000</u>
 **Interest During Construction (1 month)	 -0-
Aids to Navigation	-0-
Total Investment	<u>\$ 172,000</u>

\* Includes mobilization, demobilization, contractor's overhead, bond cost, and profit.

\*\* Use a minimum of 1 month for IDC calculations.

TABLE 2-8  
POINT JUDITH POND, RI  
PLAN B (NORTH BASIN)  
FIRST COST OF FEDERAL IMPROVEMENT

8-FOOT DEEP, 150-FOOT WIDE CHANNEL

*Dredging	
Ordinary Material at \$19.90/cy	
5,200 cubic yards	\$ 103,000
Contingencies	21,000
	<hr/>
Construction Cost	\$ 124,000
Engineering and Design	18,000
Supervision and Administration	25,000
	<hr/>
TOTAL FIRST COST	\$ 167,000
**Interest During Construction (1 month)	-0-
Aids to Navigation	8,000
	<hr/>
Total Investment	\$ 175,000

10-FOOT DEEP, 150-FOOT WIDE CHANNEL

*Dredging	
Ordinary Material at \$10.20/cy	
13,400 cubic yards	\$ 137,000
Contingencies	27,000
	<hr/>
Construction Cost	\$ 164,000
Engineering and Design	19,000
Supervision and Administration	27,000
	<hr/>
TOTAL FIRST COST	\$ 210,000
**Interest During Construction (1 month)	-0-
Aids to Navigation	8,000
	<hr/>
Total Investment	\$ 218,000

\* Includes mobilization, demobilization, contractor's overhead, bond cost, and profit.

\*\* Use a minimum of 1 month for IDC calculations.

TABLE 2-8 (CONT'D)  
POINT JUDITH POND, RI  
PLAN B (NORTH BASIN)  
FIRST COST OF FEDERAL IMPROVEMENT

12-FOOT DEEP, 150-FOOT WIDE CHANNEL

*Dredging	
Ordinary Material at \$6.65/cy	
24,500 cubic yards	\$ 163,000
Contingencies	33,000
	<hr/>
Construction Cost	\$ 196,000
Engineering and Design	19,000
Supervision and Administration	29,000
	<hr/>
TOTAL FIRST COST	\$ 244,000
**Interest During Construction (1 month)	-0-
Aids to Navigation	8,000
	<hr/>
Total Investment	\$ 252,000

\* Includes mobilization, demobilization, contractor's overhead, bond cost, and profit.

\*\* Use a minimum of 1 month for IDC calculations.

TABLE 2-9  
POINT JUDITH POND, RI  
PLANS A & B (COMBINED)  
FIRST COST OF FEDERAL IMPROVEMENT  
15 AND 10-FOOT DEEP CHANNELS  
(200 AND 150 FEET WIDE)

*Dredging	
Ordinary Material at \$7.30/cy	
22,400 cubic yards	\$ 164,000
Contingencies	33,000
	<hr/>
Construction Cost	\$ 197,000
Engineering and Design	19,000
Supervision and Administration	29,000
	<hr/>
TOTAL FIRST COST	\$ 245,000
**Interest During Construction (1 month)	-0-
Aids to Navigation	8,000
	<hr/>
Total Investment	\$ 253,000

\* Includes mobilization, demobilization, contractor's overhead, bond cost, and profit.

\*\* Use a minimum of 1 month for IDC calculations.



TABLE 2-10  
POINT JUDITH POND, RI  
PLAN C1 (JERUSALEM)  
FIRST COST OF FEDERAL IMPROVEMENT  
15-FOOT DEEP, 150-FOOT WIDE CHANNEL

*Dredging	
Ordinary Material at \$5.65/cy	
179,100 cubic yards	\$ 1,012,000
Contingencies	202,000
Construction Cost	<u>\$ 1,214,000</u>
Engineering and Design	24,000
Supervision and Administration	101,000
TOTAL FIRST COST	<u>\$ 1,339,000</u>
 **Interest During Construction (3 months)	 10,000
Aids to Navigation	-0-
Total Investment	<u>\$ 1,349,000</u>

\* Includes mobilization, demobilization, contractor's overhead, bond cost, and profit.

\*\* Use a minimum of 1 month for IDC calculations.

TABLE 2-11  
POINT JUDITH POND, RI  
PLAN C2 (JERUSALEM)  
FIRST COST OF FEDERAL IMPROVEMENT  
12-FOOT DEEP, 100-FOOT WIDE CHANNEL

*Dredging	
Ordinary Material at \$6.80/cy	
64,200 cubic yards	\$ 437,000
Contingencies	87,000
Construction Cost	<u>\$ 524,000</u>
Engineering and Design	22,000
Supervision and Administration	59,000
TOTAL FIRST COST	<u>\$ 605,000</u>
 **Interest During Construction (1.5 months)	 1,000
Aids to Navigation	<u>-0-</u>
Total Investment	\$ 606,000

\* Includes mobilization, demobilization, contractor's overhead, bond cost, and profit.

\*\* Use a minimum of 1 month for IDC calculations.

## SELECTED PLAN

The Selected Plan, as determined through economic and environmental analysis, is a combination of Plans A and B. The plan involves widening by 50 feet the existing 15-foot deep Federal channel opposite the West Bulkhead in Galilee, and extending this channel 1200 feet into the North Basin area at a depth of 10 feet and a width of 150 feet. Completion of this work would require dredging 22,400 cubic yards of ordinary material. This would provide the existing commercial fleet with safe access to existing as well as new docking areas being built by the State, at all tidal stages, thereby increasing operational efficiency. The recommended plan of improvement is shown in Figure 2-9.

## AIDS TO NAVIGATION

Specific cost for aids to navigation will be obtained from the U.S. Coast Guard, which would be responsible for placing and maintaining any aids they deem necessary for boating safety. For purposes of this report, assumptions were made regarding requirements for such aids.

There is one existing Coast Guard navigation buoy marking the entrance to the West Branch channel. It is estimated that two additional navigation aids will be required to mark the turn and end of this improved channel.

## DISPOSAL OF DREDGED MATERIAL

Two disposal sites were identified for the disposal of dredged material from Point Judith Pond. Material removed as a result of Plans A and B would be placed in the Galilee dewatering facility. Dredged material removed from the Jerusalem plan would be disposed of on East Matunuck State Beach.

The identified Galilee disposal site as described in the Main Report and Environmental Assessment is the State of Rhode Island's dewatering facility. This containment facility is located about 1500 feet from the proposed improvement work in Galilee. It is bordered by the Escape Road on one side and the Galilee Wildlife Sanctuary on the other. The site has previously been used for the temporary disposal of dredged material generated from the State of Rhode Island's improvement work in the West Bulkhead and North Basin areas. Material dredged from the proposed plans would be pumped directly to the containment site where dewatering would take place. The use of a hay baled siltation fence would trap any escaping sediments while the runoff makes its way back into Bluff Hill Cove. Once sufficiently dewatered, it becomes the state's responsibility to have the material removed by truck to disposal sites of their choice.

Due to the larger volumes of material to be dredged from the Jerusalem channel, it was necessary to find a different method of disposal. The identified disposal site selected for these improvements is at East Matunuck State Beach. Again, the dredged material will be pumped to the disposal site, however, in this case a booster pump would be required as the distance from project site to disposal area exceeds one mile. Once the material reaches the beach and is sufficiently dewatered, it would then be

spread by bulldozer as beach replenishment.

In both cases the local sponsor would be responsible for all costs associated with the disposal site preparation including the dewatering facility, rehandling and transportation of the dredged material.

#### MAINTENANCE COSTS

Maintenance of various navigation improvements proposed under each alternative plan would be necessary at estimated intervals throughout the 50-year project life. Maintenance of the channels to their authorized depths would be necessary to ensure the continued efficiency of the developed areas. Continued maintenance of the existing aids to navigation would also be necessary.

Following initial dredging the channel would tend to shoal or fill in because of settlement of material from side slopes, deposition of material derived from upland erosion, and from current tidal action.

Channel side slopes would be designed in such a way as to enhance long-term stability although changes to the bottom contours would occur over time, resulting in gradual flattening of the slopes. Strong current action occurring during storms may result in the movement of bottom sediments. The propeller wash and waves produced by passing vessels would also tend to disturb the channel bottom, resulting in the redistribution of bottom sediments.

The last improvements to Point Judith Pond were made in 1977 when the 15-foot east Federal channel was extended 1400 feet to provide access to the commercial piers on the West Bulkhead in Galilee. Approximately 63,000 cubic yards of ordinary material was removed from the project area. Disposal of the material was on land, immediately opposite the construction site.

Maintenance of the Point Judith Pond project, completed in 1977, has not been necessary. Furthermore, the most recent surveys done on the area reveal that no maintenance dredging is necessary at this time.

In order to determine annualized maintenance cost resulting from the proposed improvements, estimates must be made of the with and without improvement maintenance costs. In the 11 years between the last improvement dredging in 1977, there has been no maintenance dredging performed. Therefore, the present annual shoaling rate for maintaining the existing 15-foot project, or without-improvement condition, is 0 cy.

The proposed alternatives would alter the water depths of several areas in the Pond by various amounts. Sedimentation due to the upland erosion would not be increased by the proposed alternatives. There would be some initial side slope settling due to the strong tidal currents in the area. None of the proposed improvements would, if implemented, result in an increase in the frequency of necessary maintenance operations. For purposes of economic analysis an annual rate of 2 1/2 percent of the improvement volume for each plan will be used. The estimated annual cost of increased maintenance dredging is shown in Table 2-12.

TABLE 2-12  
POINT JUDITH POND, RHODE ISLAND  
MAINTENANCE DREDGING COSTS

	PLAN A WEST BULKHEAD WIDENING ALONE	PLAN B NORTH BASIN EXTENSION ALONE (8,10,12-FOOT)	PLANS A & B COMBINED	PLAN C JERUSALEM CHANNEL	
				PLAN C1 15-FOOT CHANNEL	PLAN C2 12-FOOT CHANNEL
IMPROVEMENT QUANTITY (ORDINARY MATERIAL)	9,000 cy	5,200 cy 13,400 cy 24,500 cy	22,400 cy	179,100 cy	64,200 cy
ANNUAL SHOALING (2 1/2 PERCENT)	225 cy	130 cy 335 cy 613 cy	560 cy	4,478 cy	1,605 cy
COST/cy (ORDINARY MATERIAL) including disposal, E&O and S&A	\$ 19.10	\$ 32.30 \$ 15.80 \$ 10.00	\$ 10.90	\$ 7.50	\$ 9.40
ANNUAL MAINTENANCE COST	\$ 4,300	\$ 4,200 \$ 5,300 \$ 6,100	\$ 6,100	\$ 33,500	\$ 15,100

Future maintenance dredging activity could make use of the state operated containment area with approval from the state authorities. Otherwise, it would be the local responsibility to locate an appropriate disposal site and fund construction of any necessary features as defined in point 3 of the items of local assurance found in the main report.

#### ANNUAL CHARGES

Annual charges assessed to each detailed plan are a combination of annual maintenance costs and the annual interest and amortization charges resulting from the cost of improvement assessed over the 50-year project life. The charge for interest and amortization is based on a rate of 8 7/8 percent. The maintenance charge for navigation aids is estimated to be \$500 per added buoy. The annual charges for each plan are shown in Table 2-13.

TABLE 2-13  
POINT JUDITH POND, RI  
FEDERAL PROJECT ALTERNATIVES  
SUMMARY OF ANNUAL CHARGES

#### PLAN A

Amortization of Total Investment Cost	\$ 15,500
Maintenance Dredging	4,300
Maintenance of Navigation Aids	-0-
	<hr/>
TOTAL ANNUAL CHARGES	\$ 19,800

#### PLAN B

##### 8-FOOT CHANNEL

Amortization of Total Investment Cost	\$ 15,800
Maintenance Dredging	4,200
Maintenance of Navigation Aids	1,000
	<hr/>
TOTAL ANNUAL CHARGES	\$ 21,000

##### 10-FOOT CHANNEL

Amortization of Total Investment Cost	\$ 19,600
Maintenance Dredging	5,300
Maintenance of Navigation Aids	1,000
	<hr/>
TOTAL ANNUAL CHARGES	\$ 25,900

##### 12-FOOT CHANNEL

Amortization of Total Investment Cost	\$ 22,700
Maintenance Dredging	6,100
Maintenance of Navigation Aids	1,000
	<hr/>
TOTAL ANNUAL CHARGES	\$ 29,800

PLANS A & B

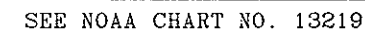
Amortization of Total Investment Cost	\$ 22,800
Maintenance Dredging	6,100
Maintenance of Navigation Aids	1,000
	<hr/>
TOTAL ANNUAL CHARGES	\$ 29,900

PLAN C1

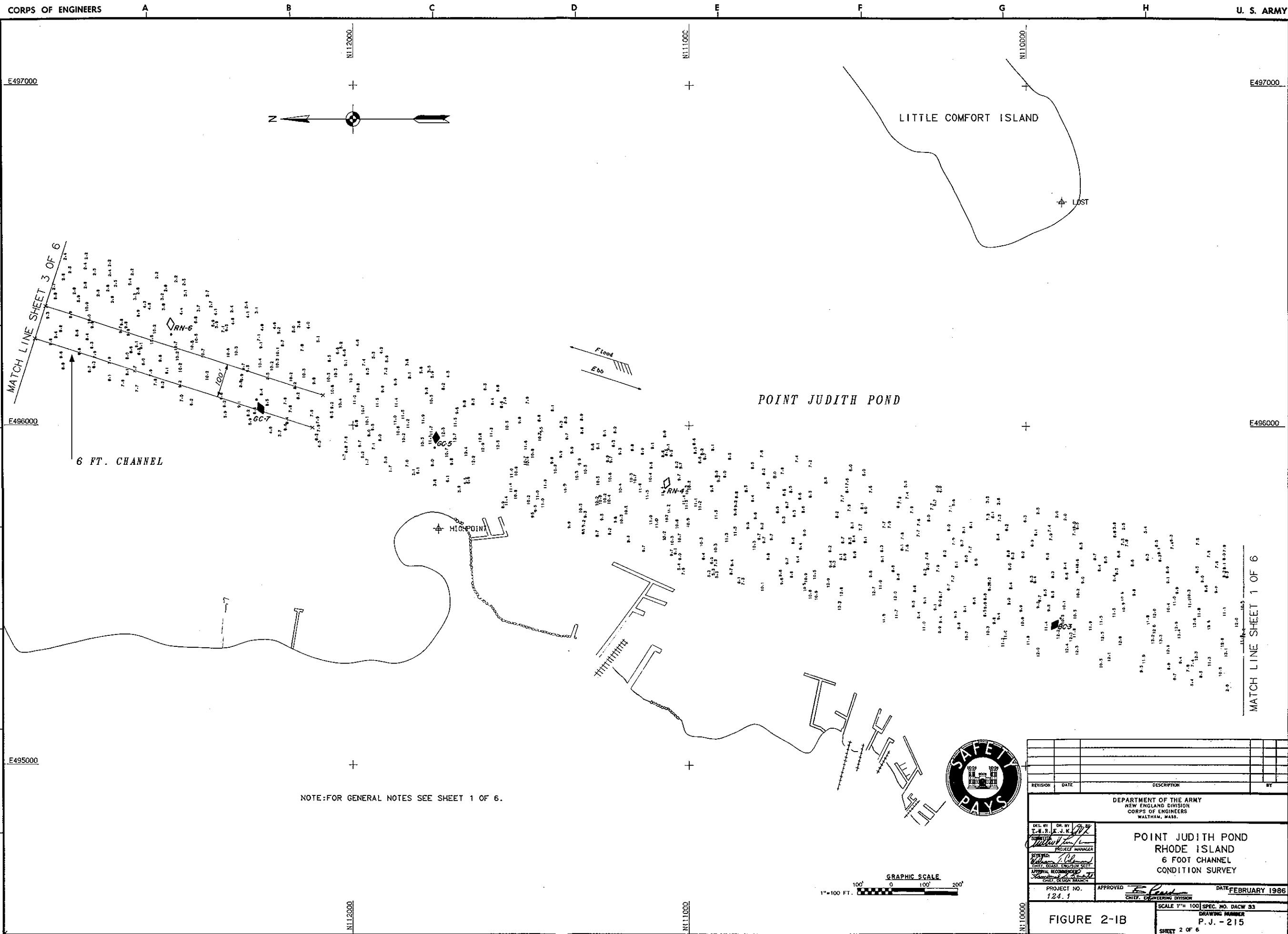
Amortization of Total Investment Cost	\$121,500
Maintenance Dredging	33,500
Maintenance of Navigation Aids	-0-
	<hr/>
TOTAL ANNUAL CHARGES	\$155,000

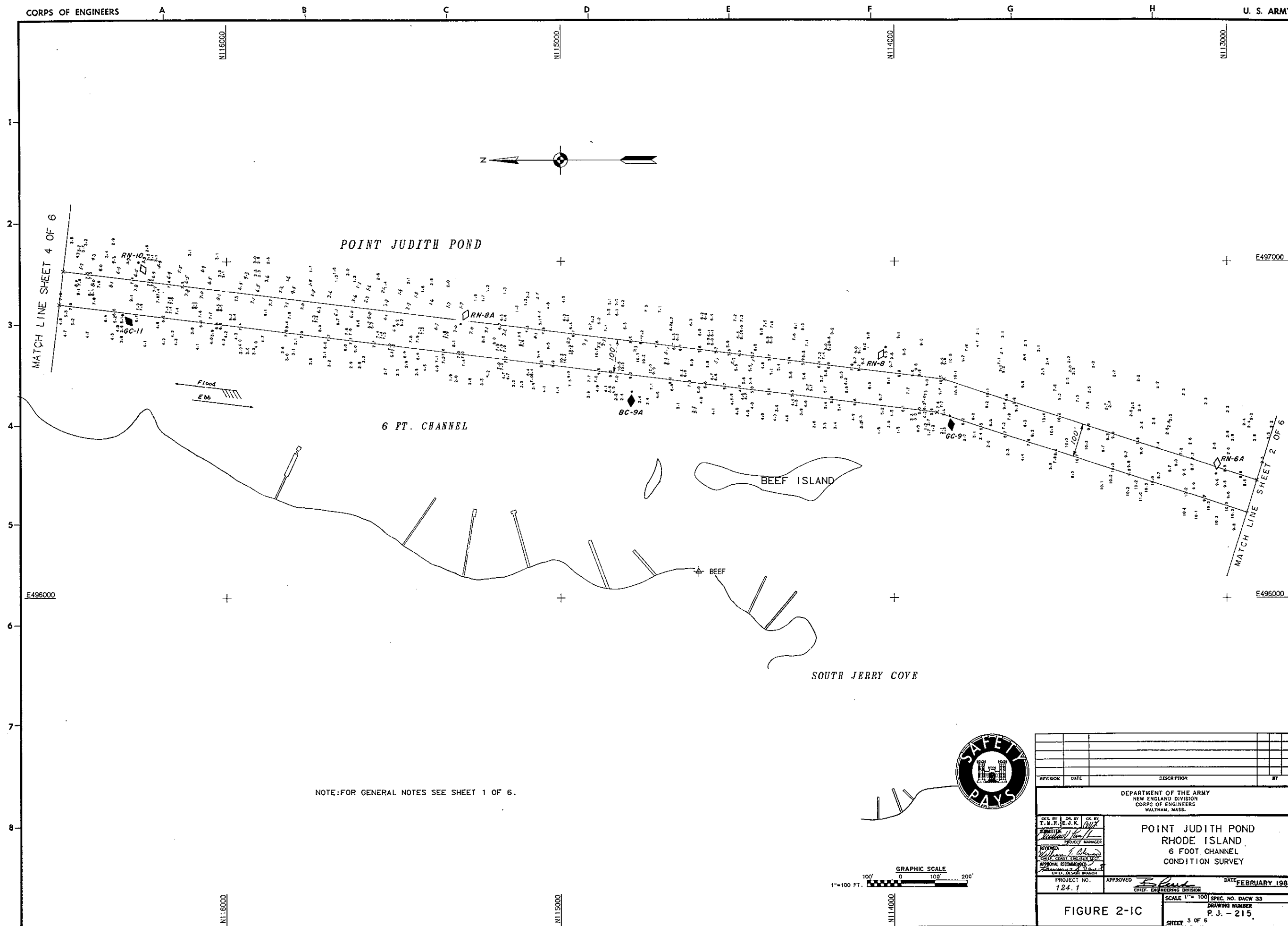
PLAN C2

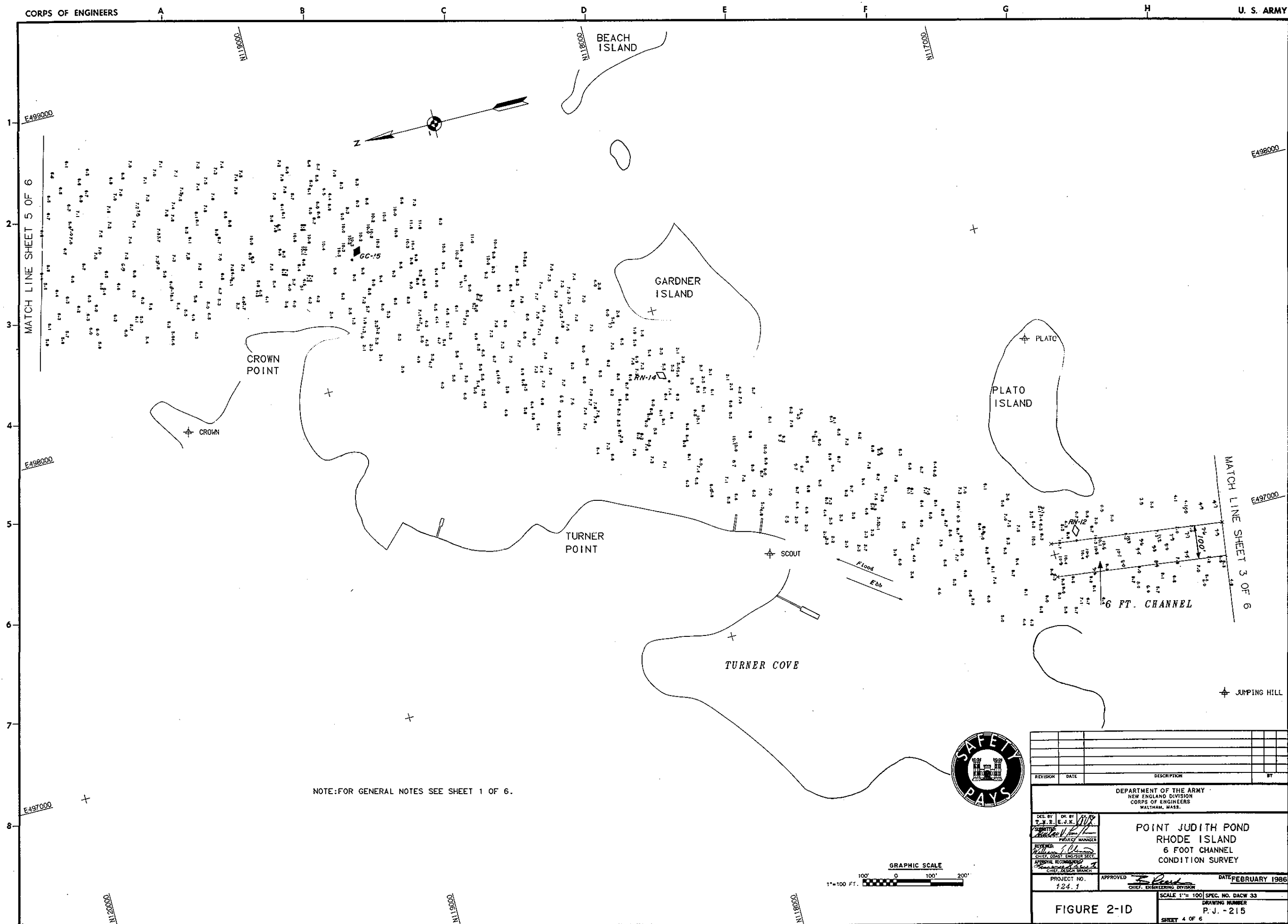
Amortization of Total Investment Cost	\$ 54,600
Maintenance Dredging	15,100
Maintenance of Navigation Aids	-0-
	<hr/>
TOTAL ANNUAL CHARGES	\$ 69,700

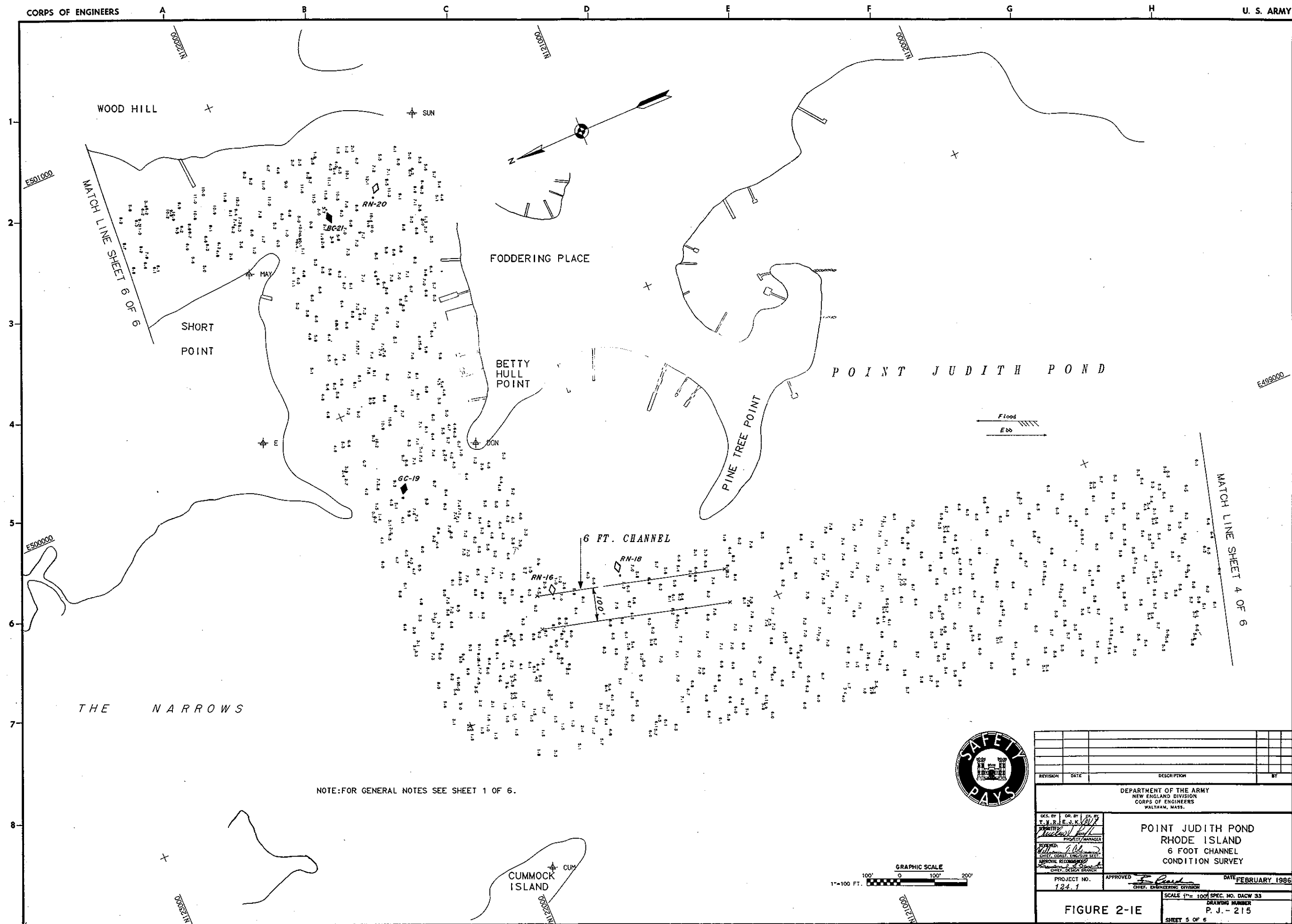


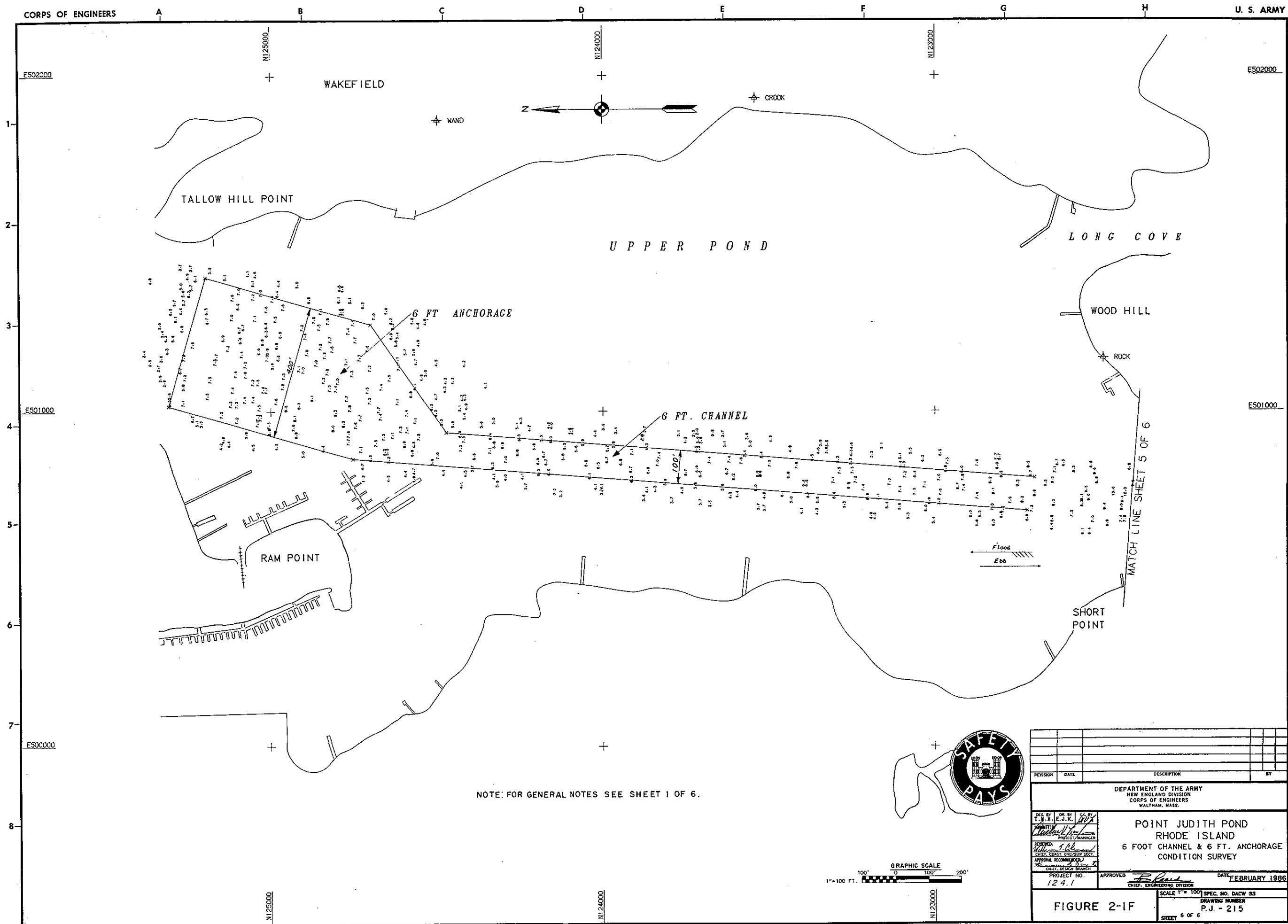


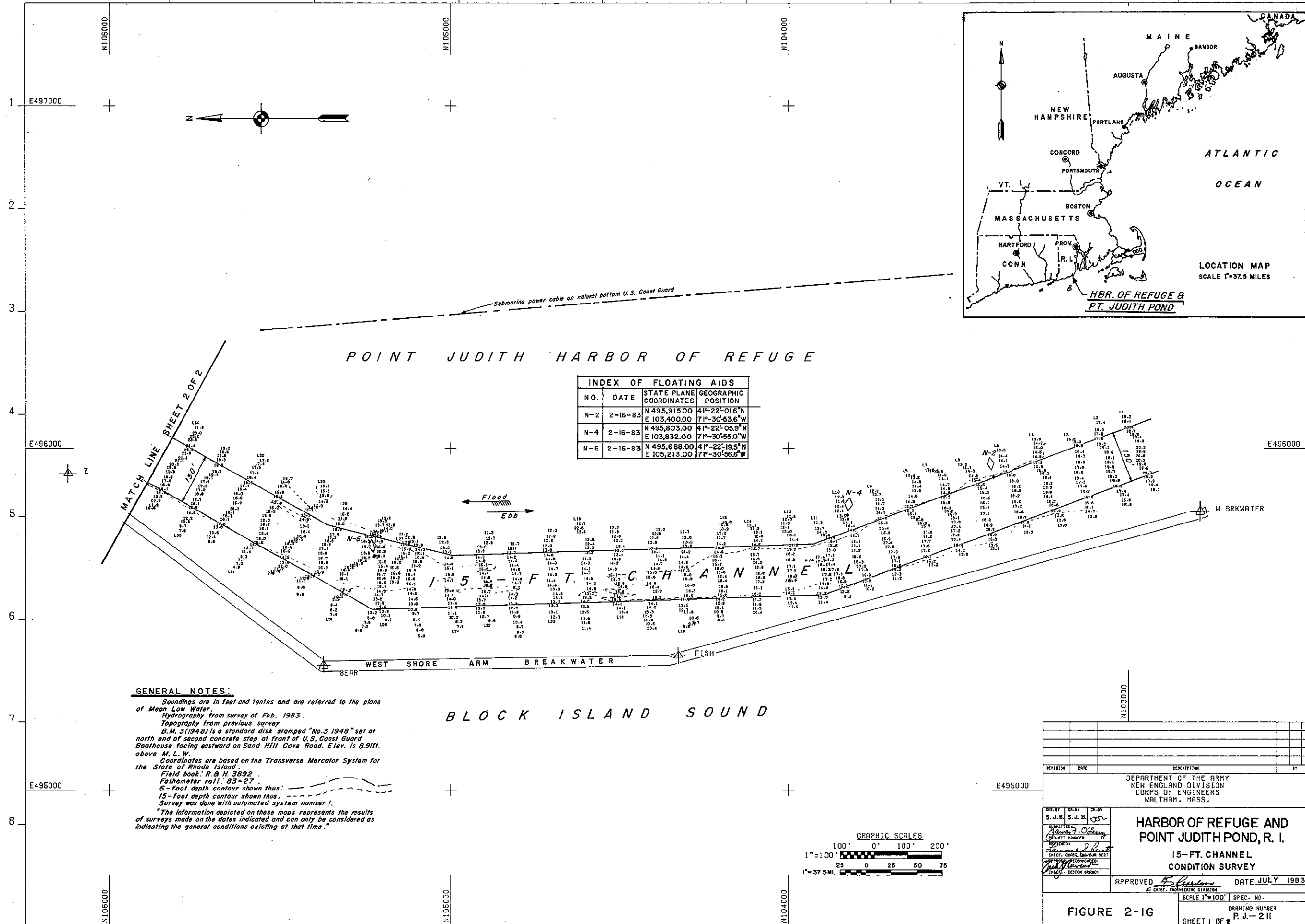


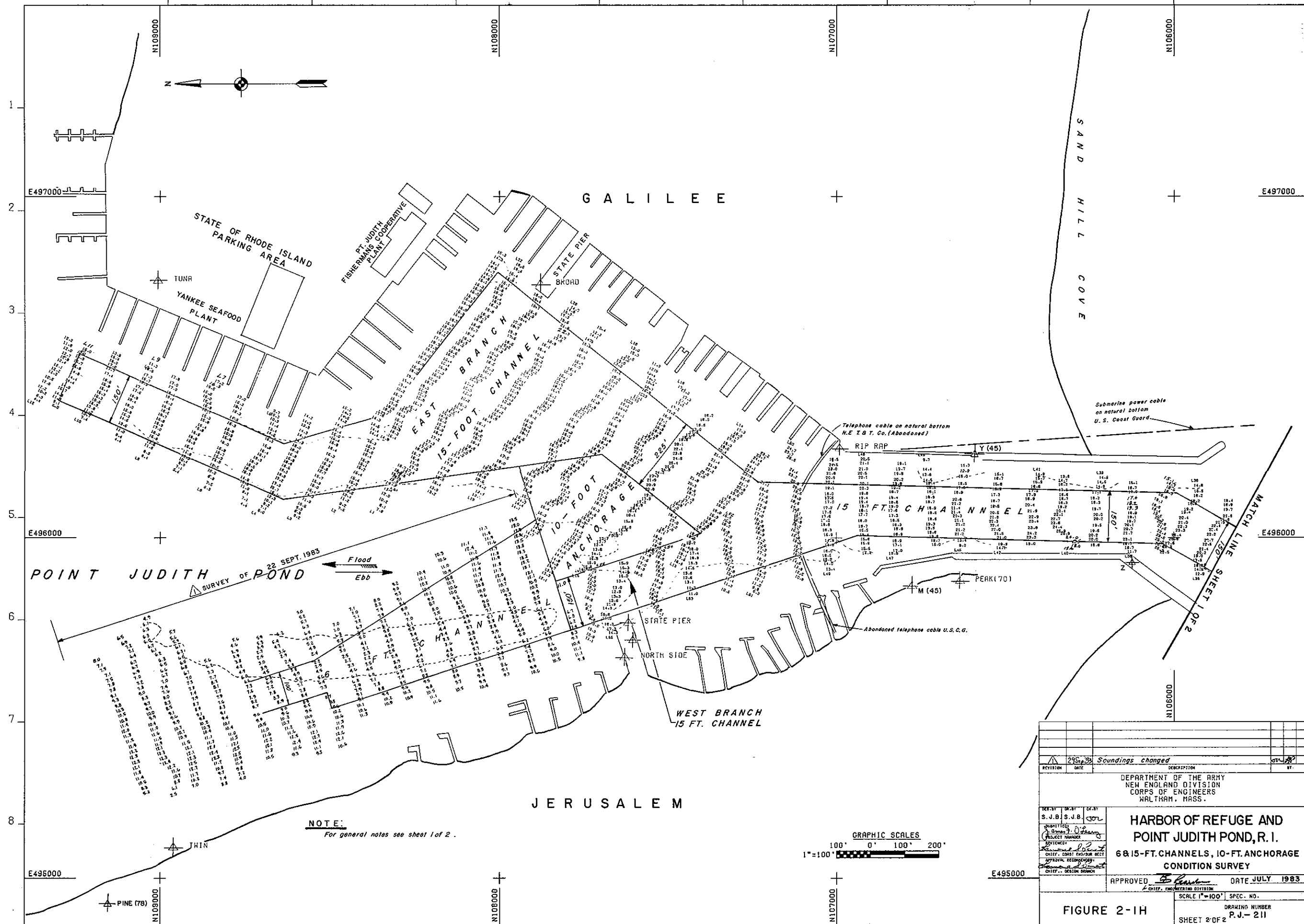


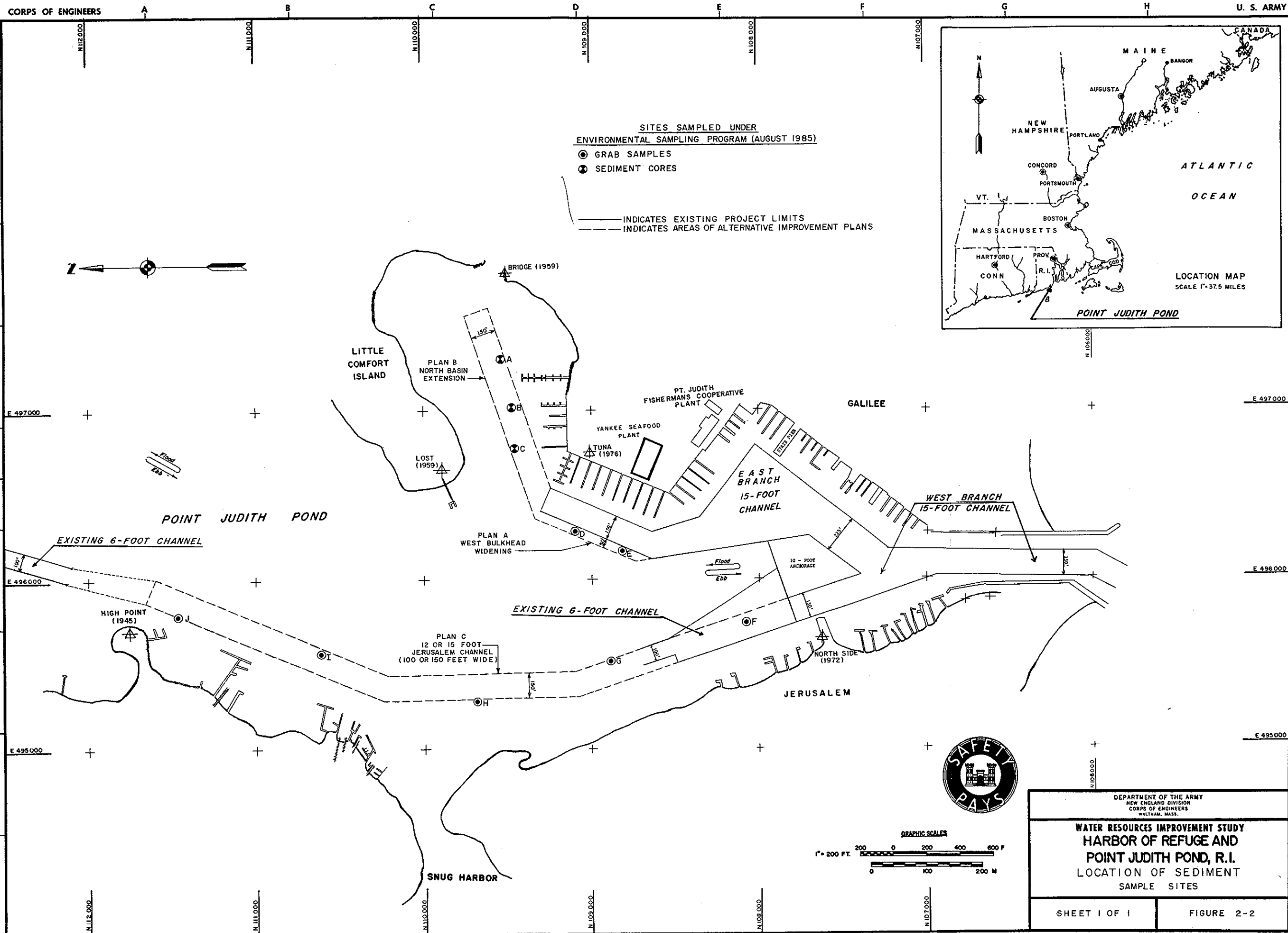




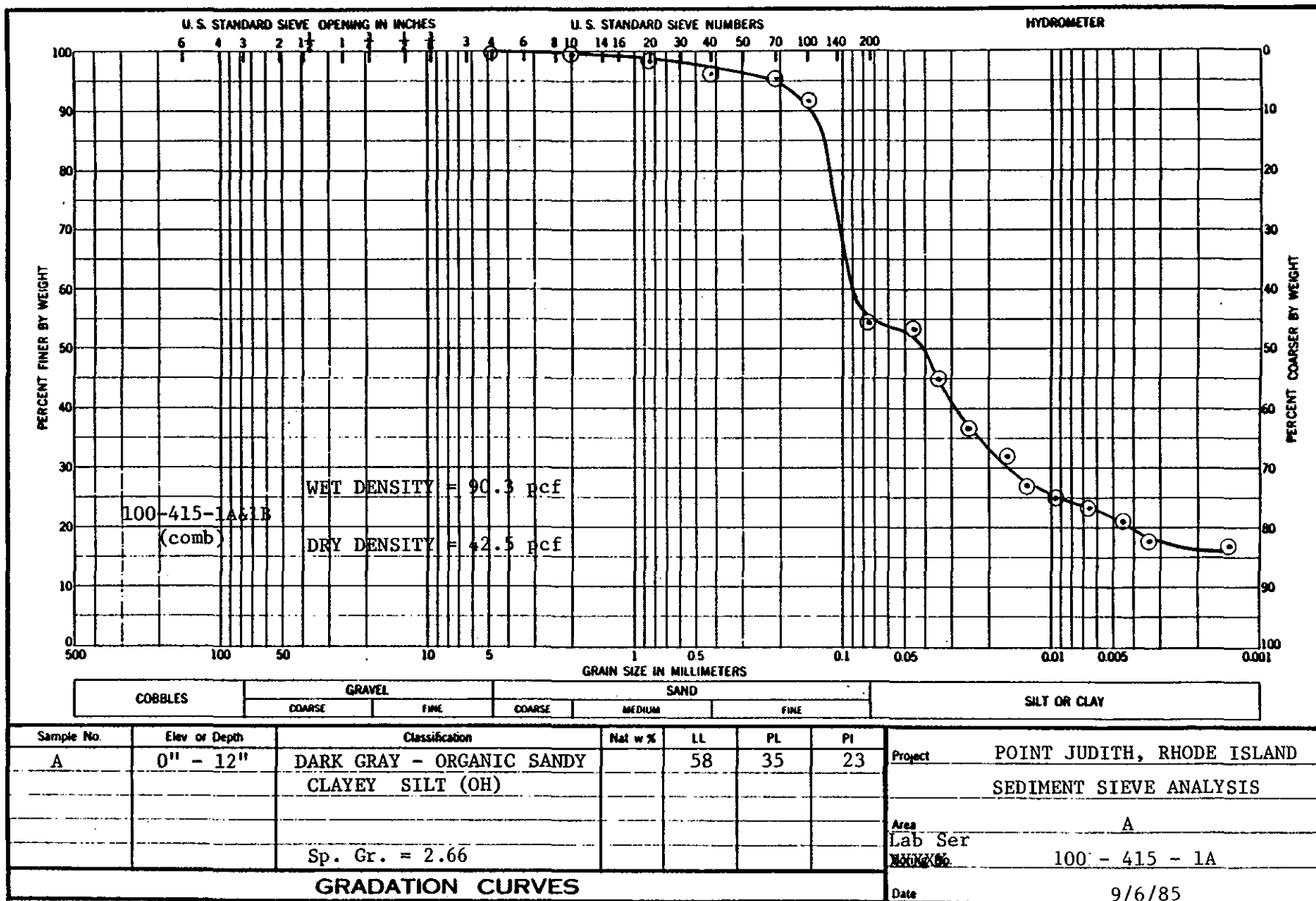




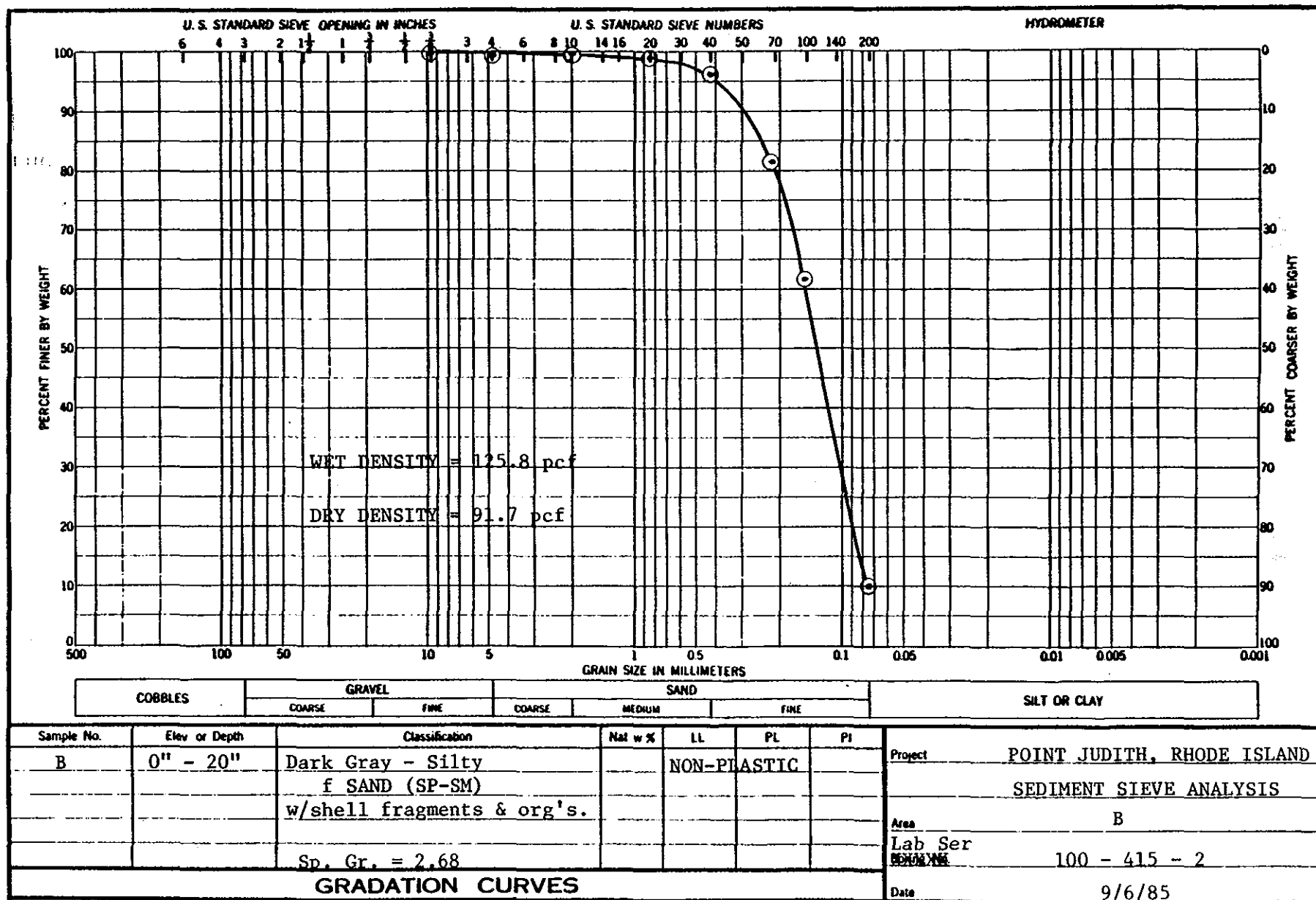


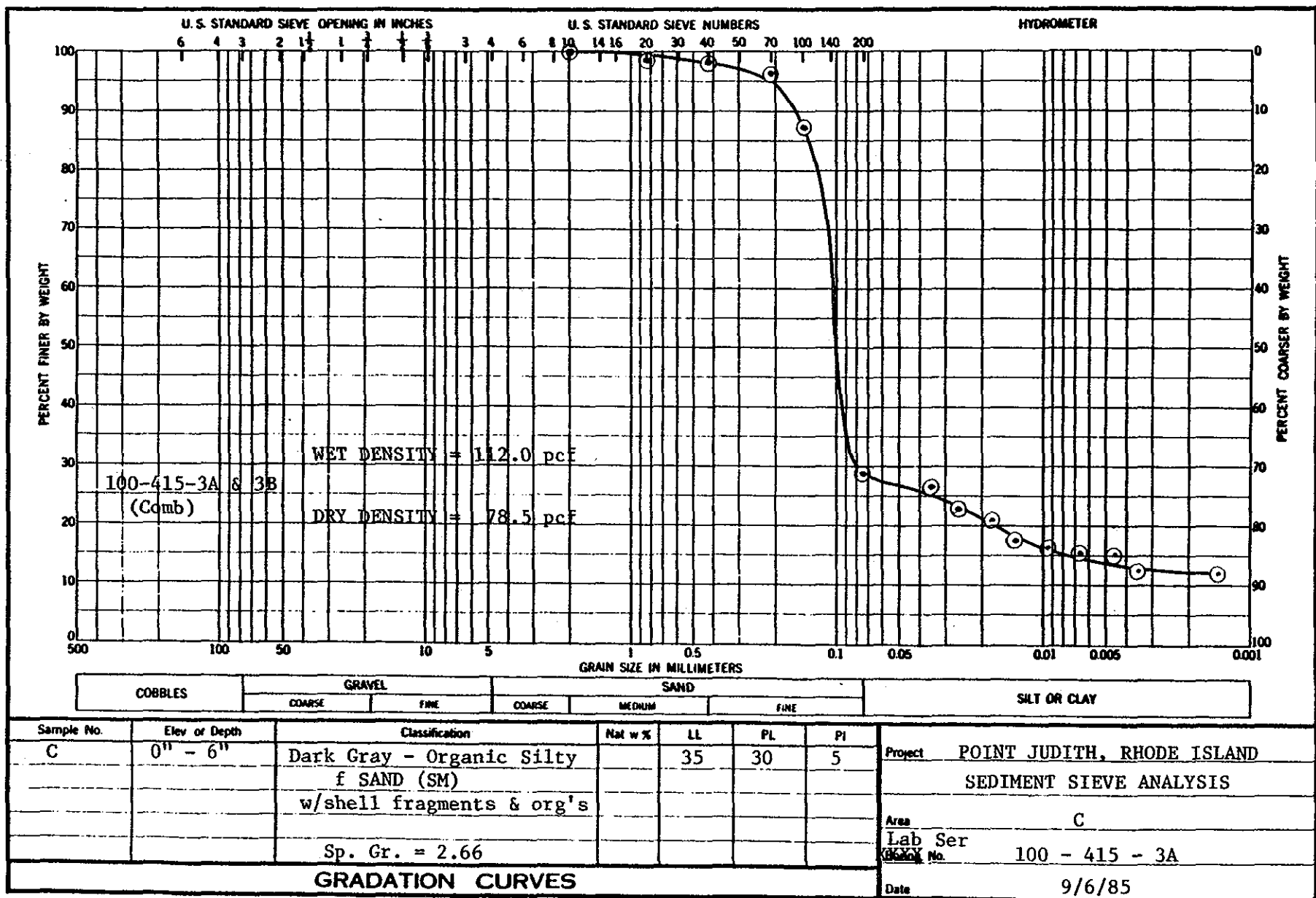


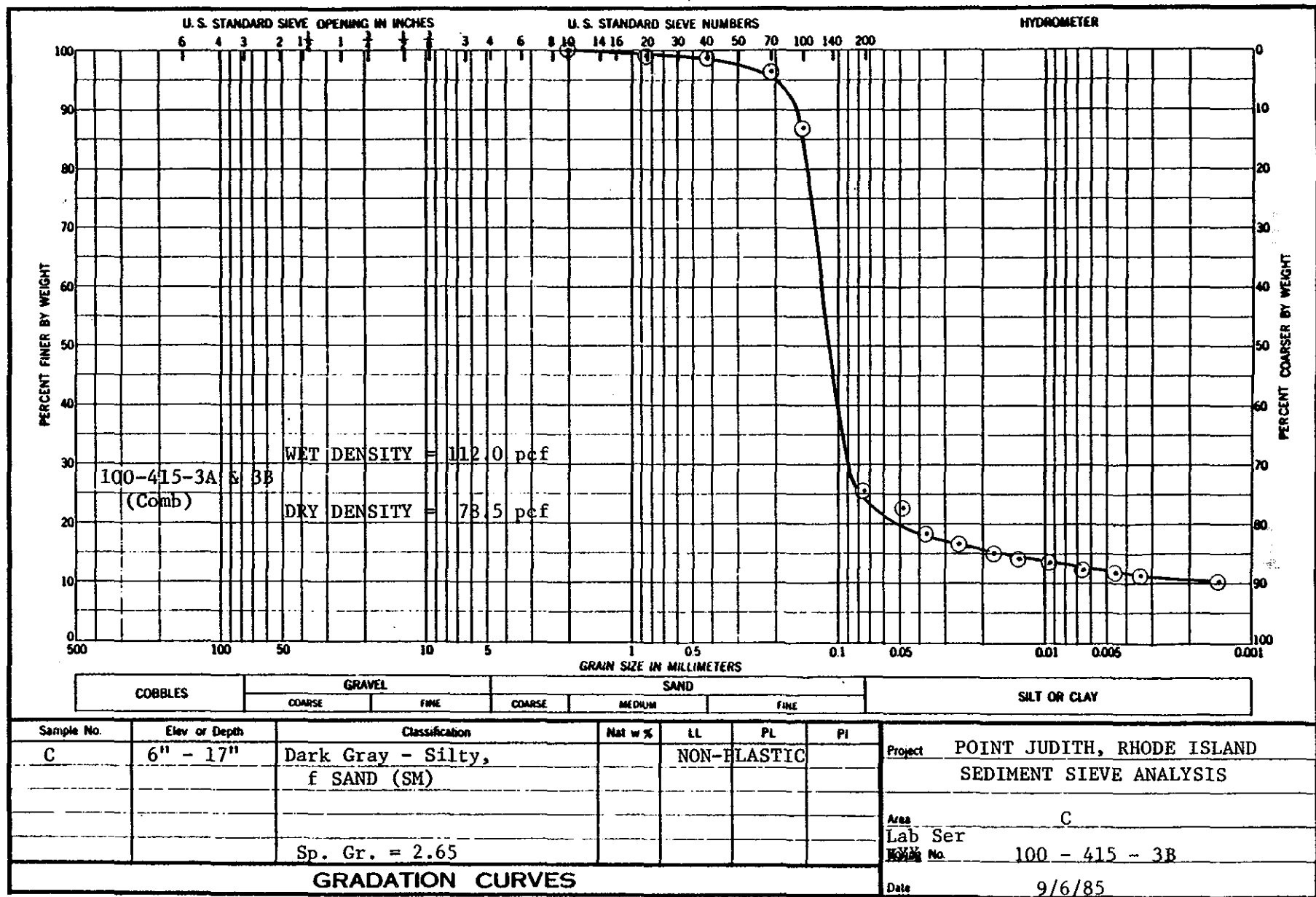


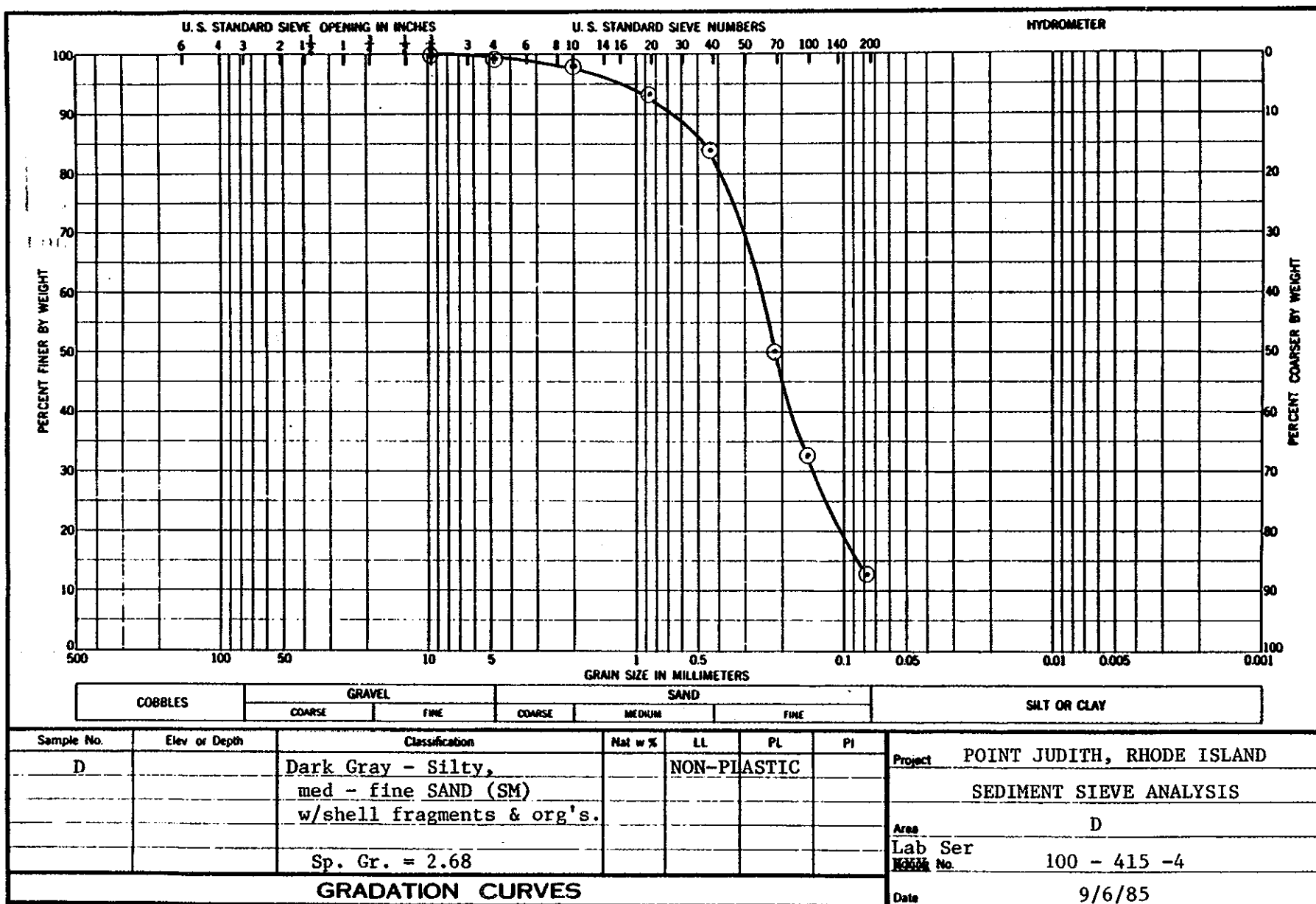


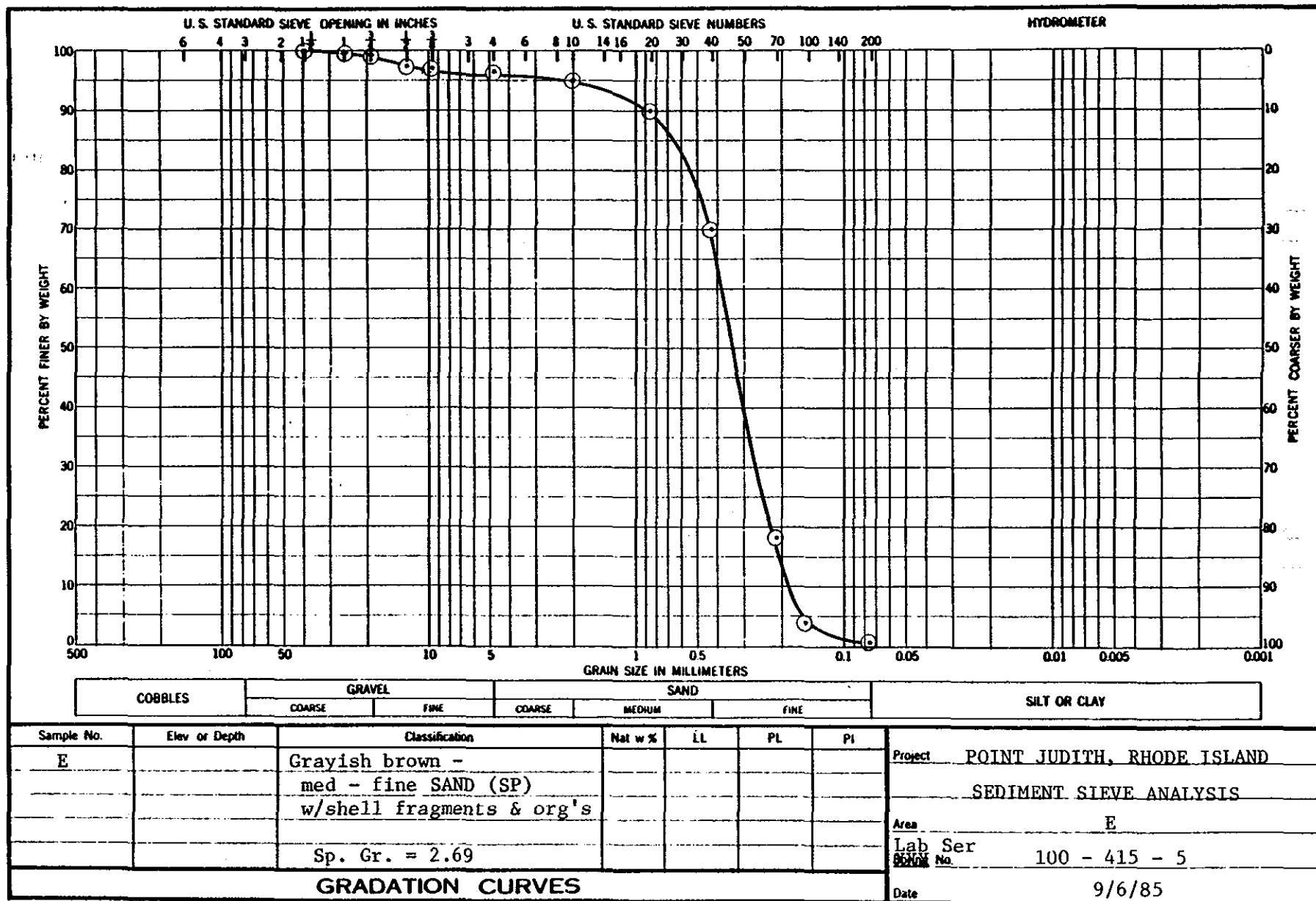


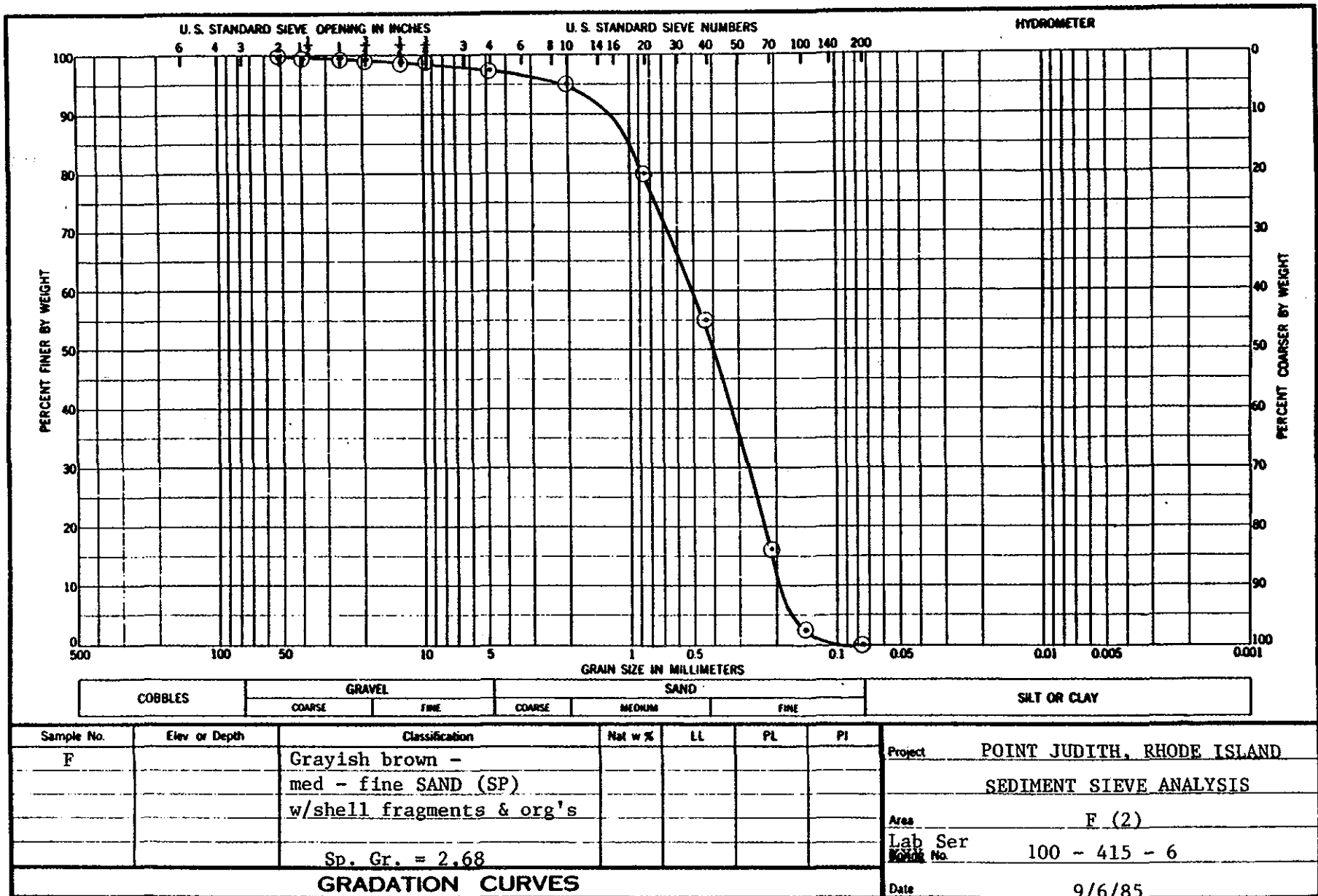










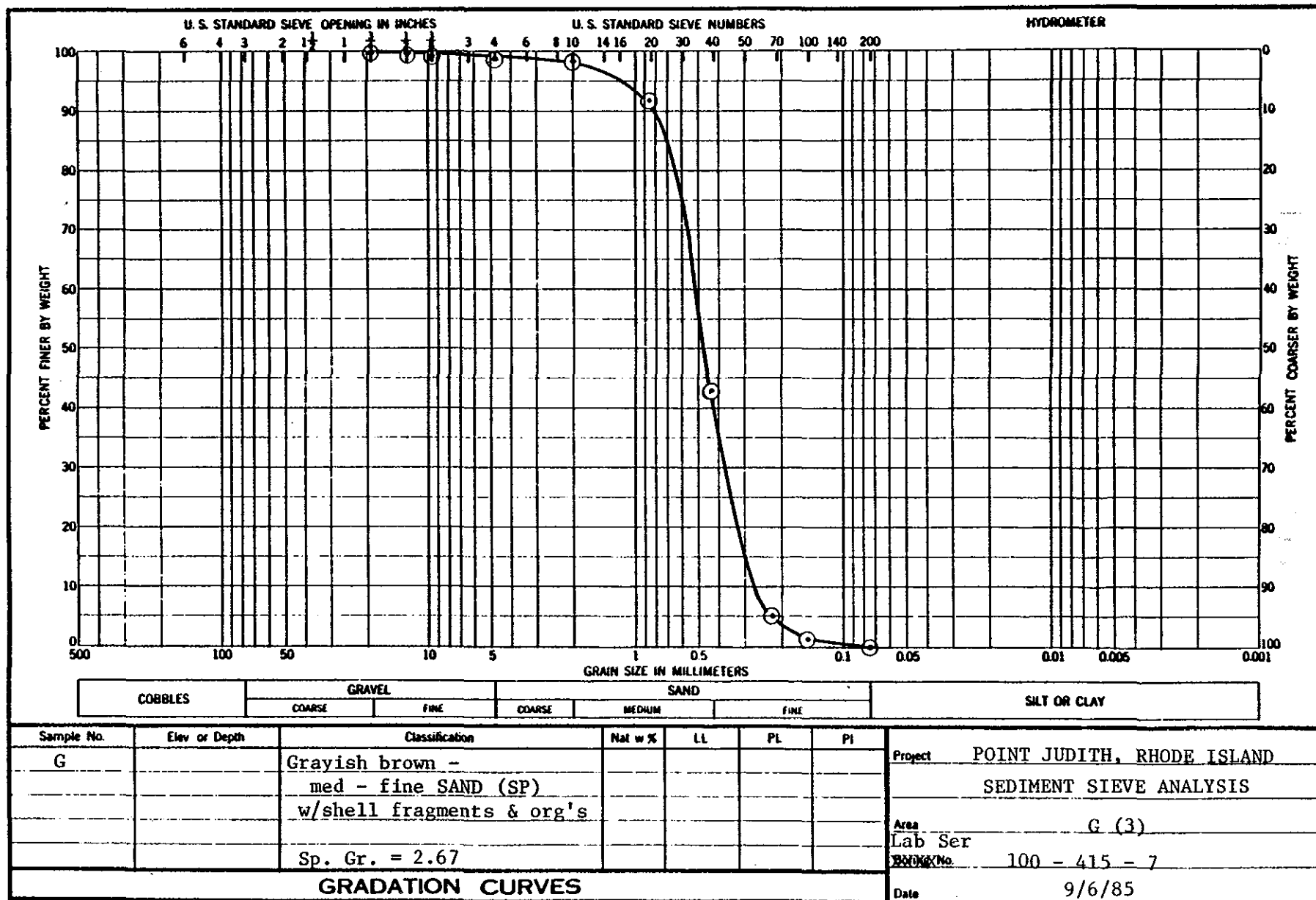


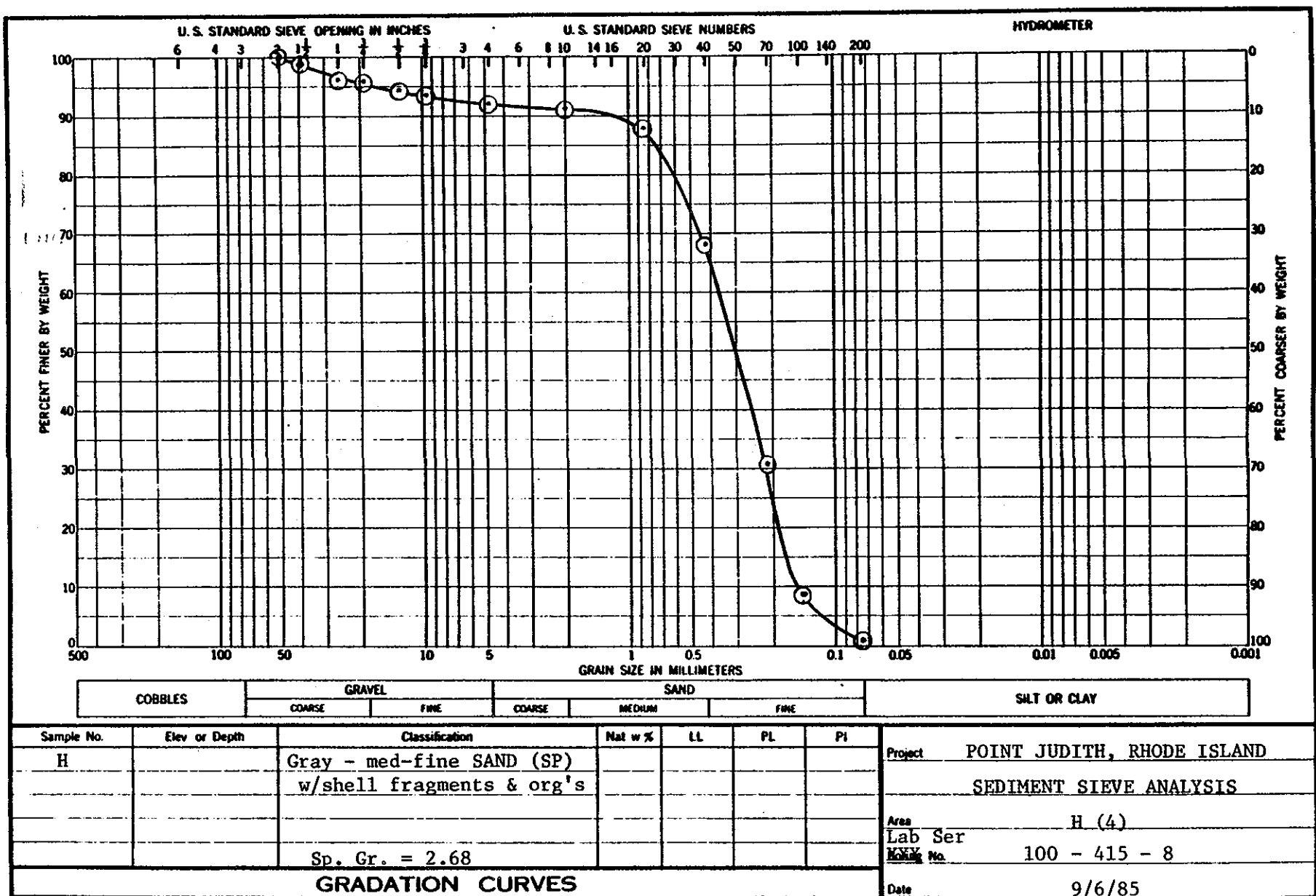
ENG FORM 2087  
1 MAY 63

GPO 926-280

FIGURE 2-3H



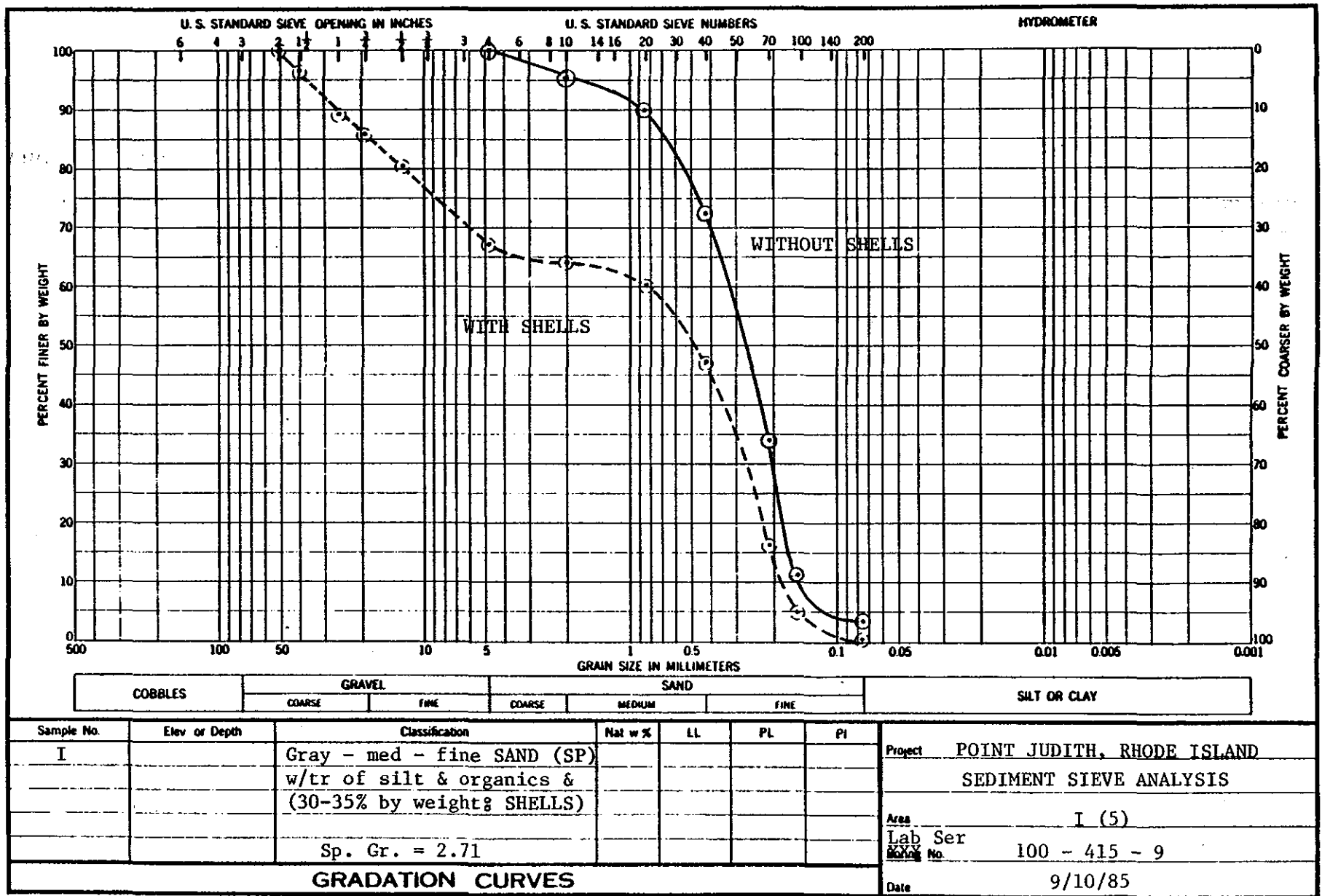


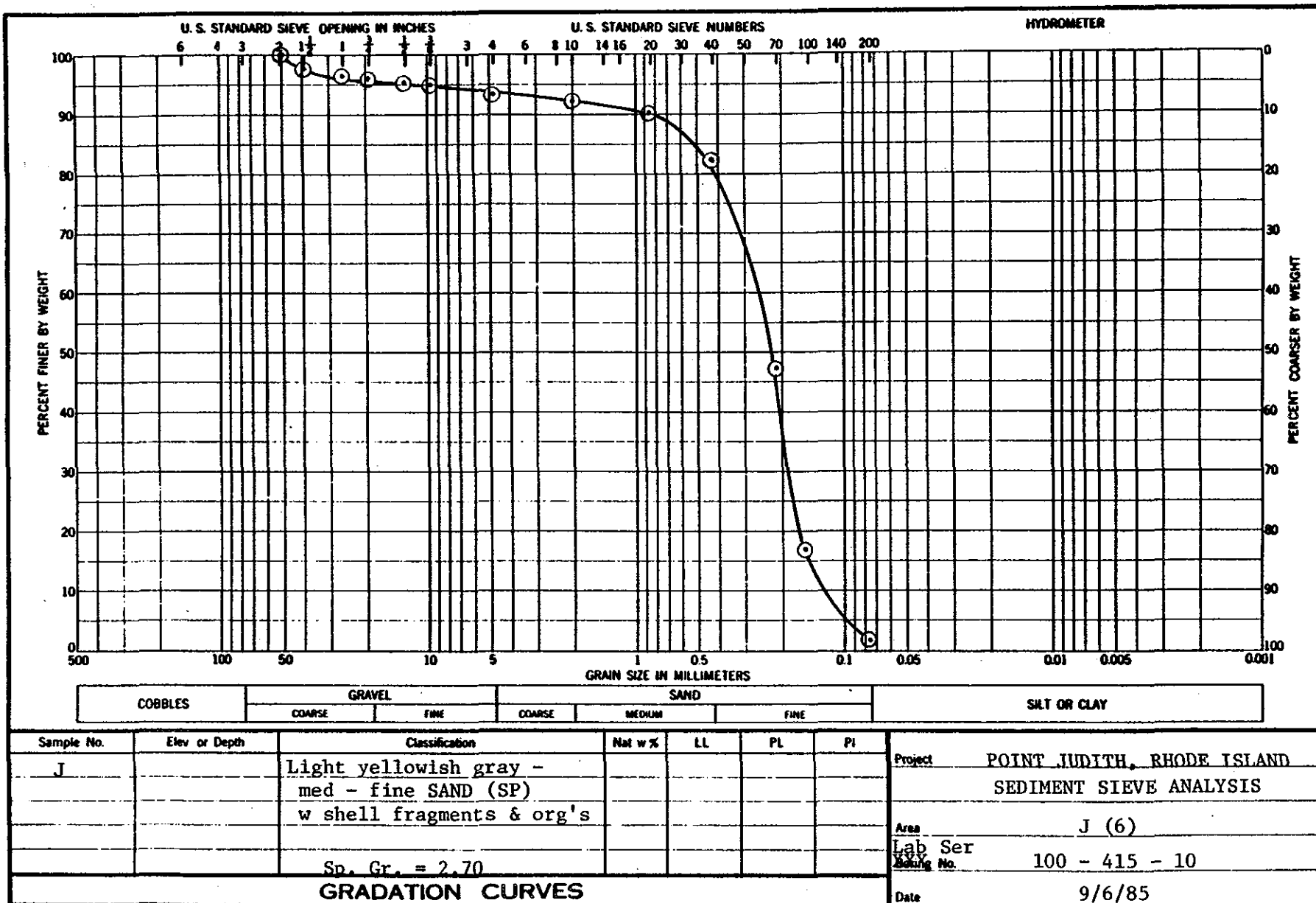


ENG FORM 2087  
MAY 63

GPO 926-280

FIGURE 2-3J

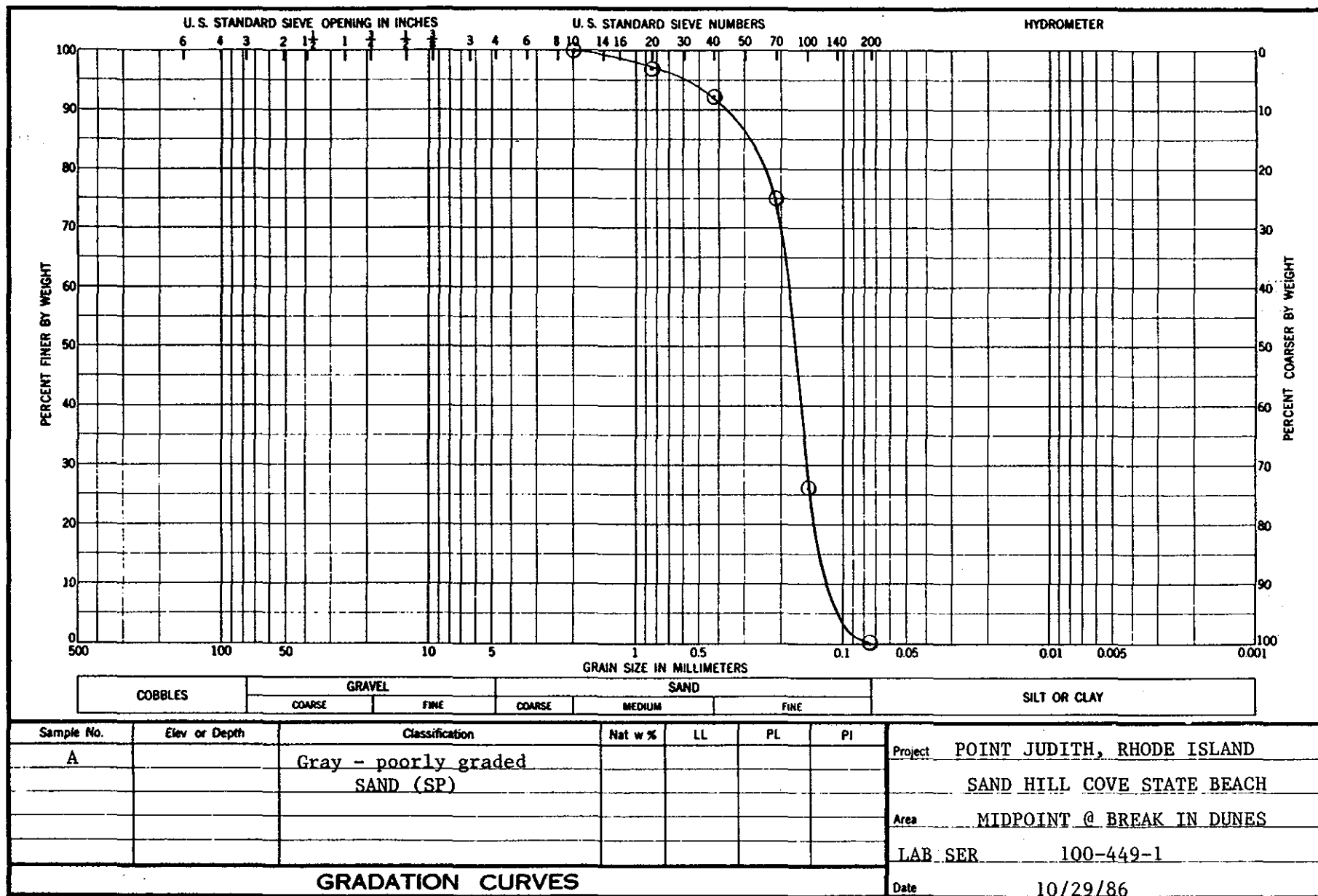




ENG FORM 2087  
1 MAY 63

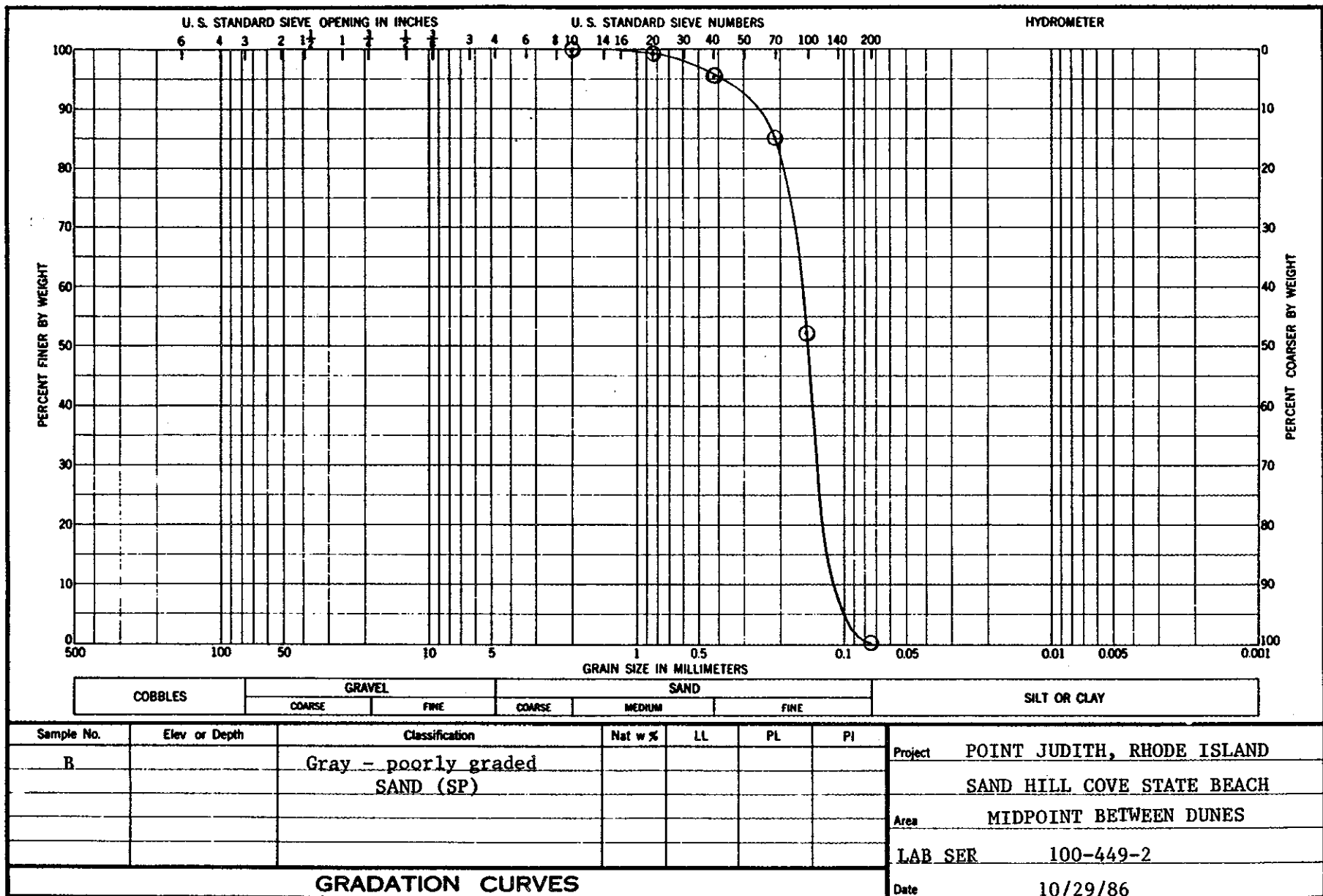
GPO 926-280

FIGURE 2-3L



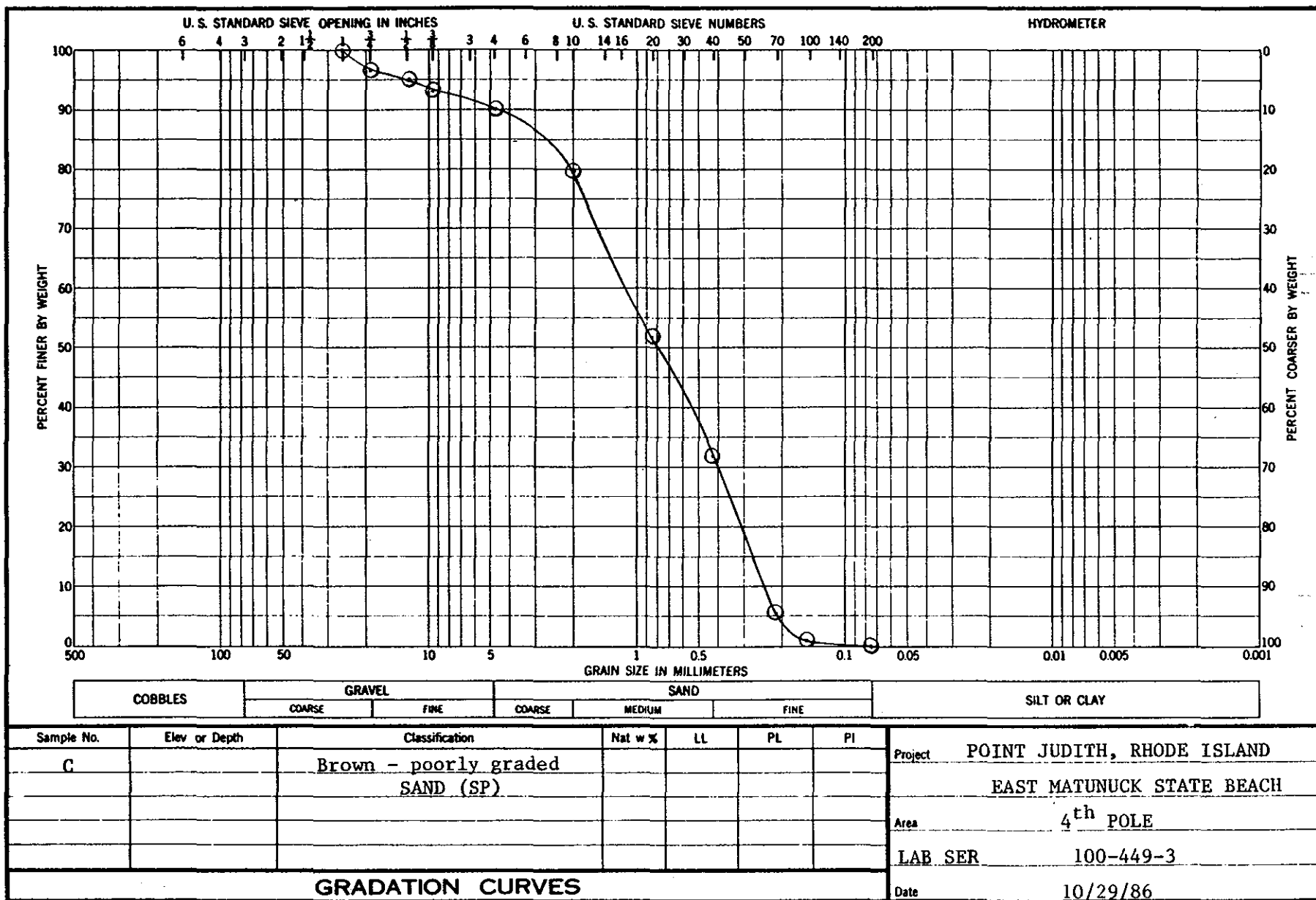
ENG FORM 2087  
1 MAY 63

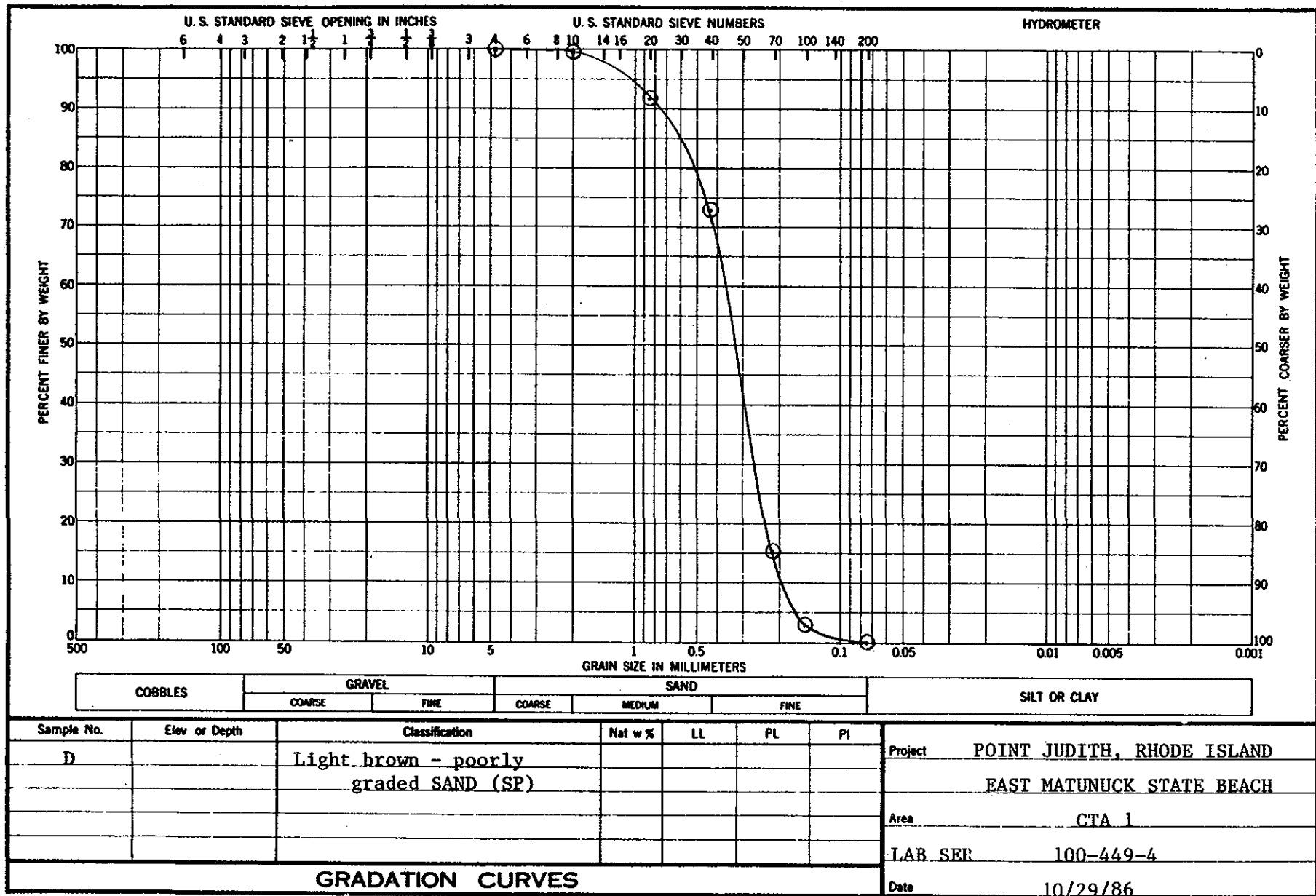
FIGURE 2-4A



ENG FORM 2087  
1 MAY 63

FIGURE 2-4B

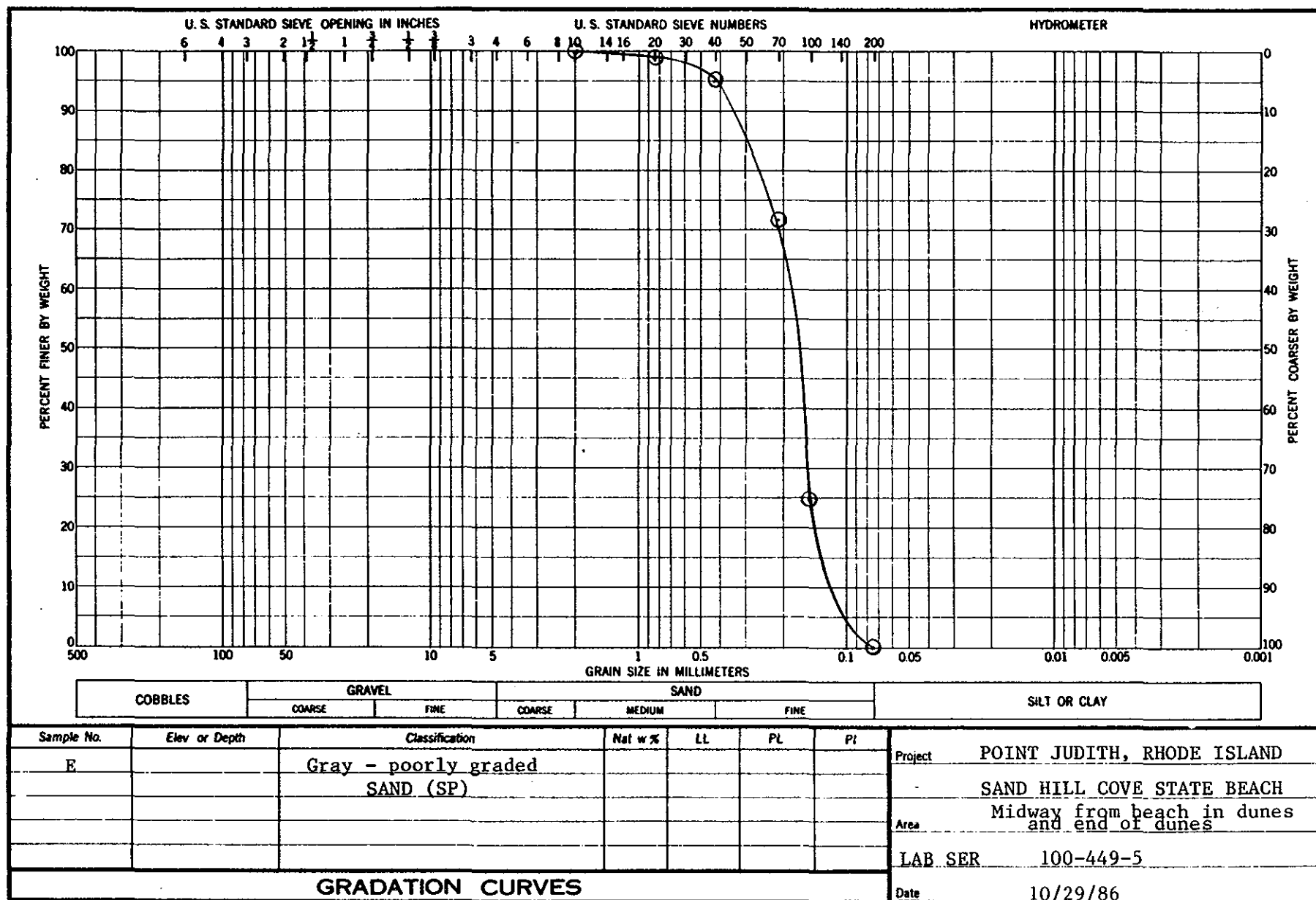




ENG FORM 2087  
1 MAY 63

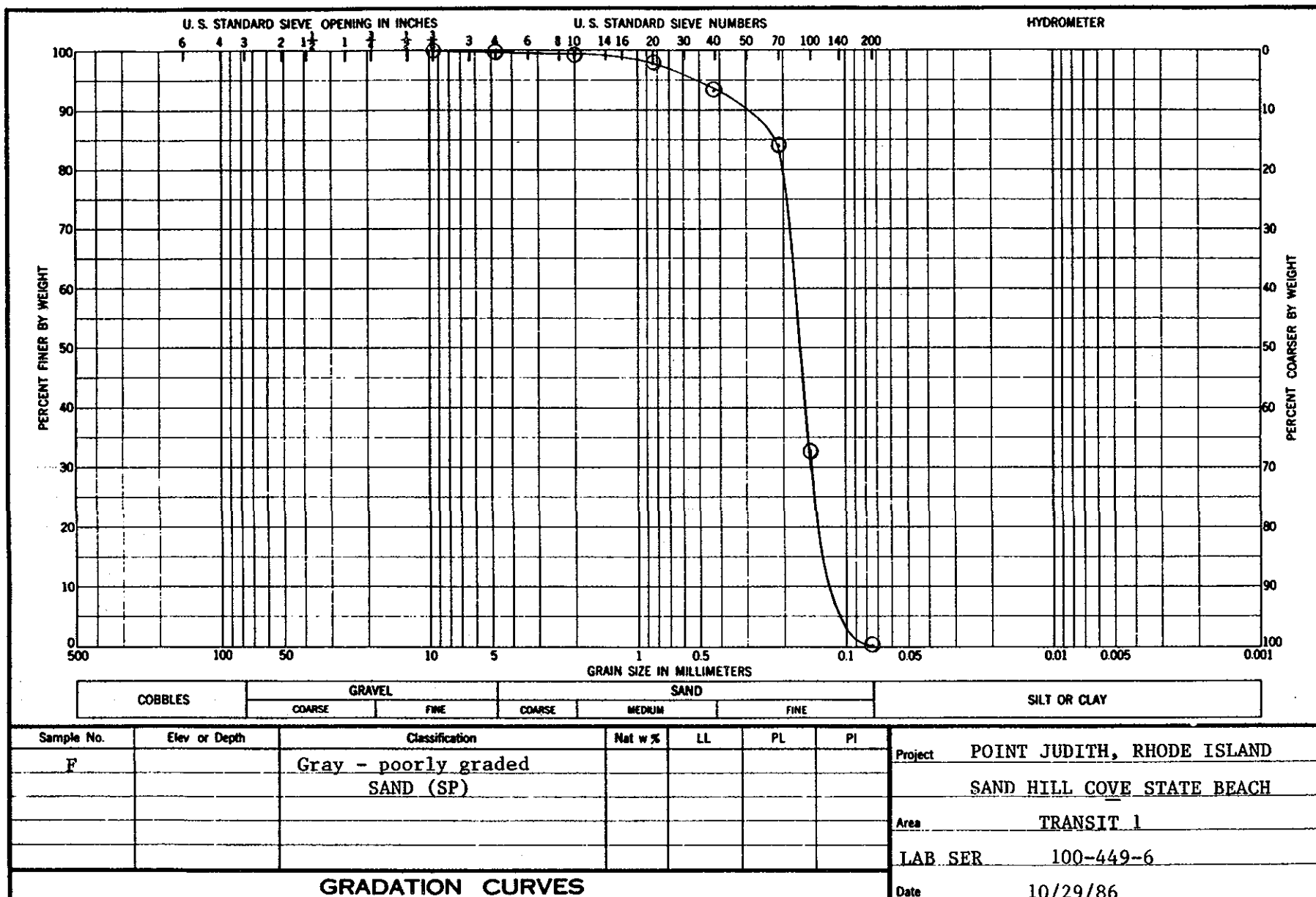
FIGURE 2-4D





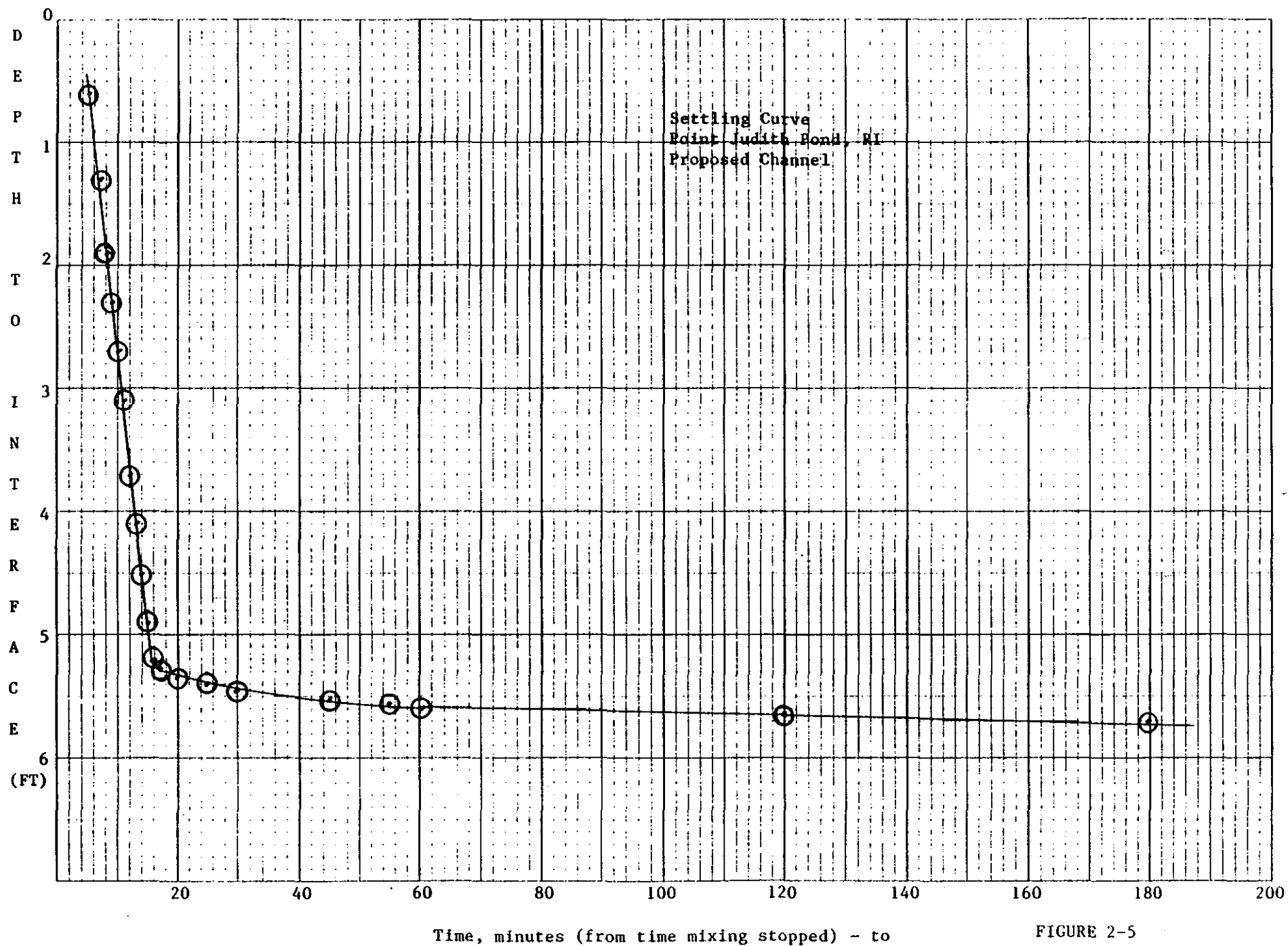
ENG FORM 2087  
1 MAY 63

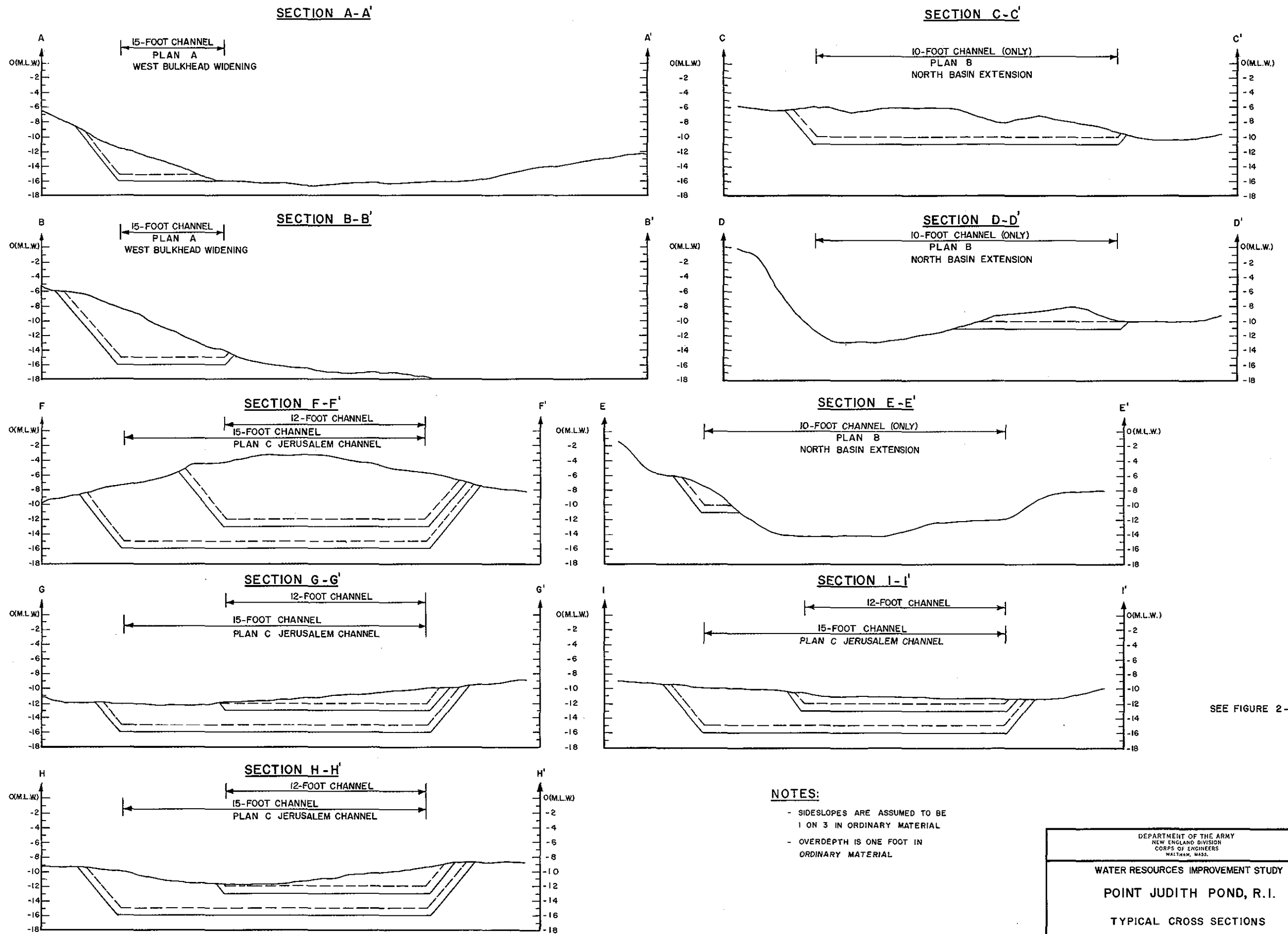
FIGURE 2-4E



ENG FORM 2087  
1 MAY 63

FIGURE 2-4F

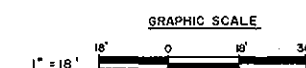




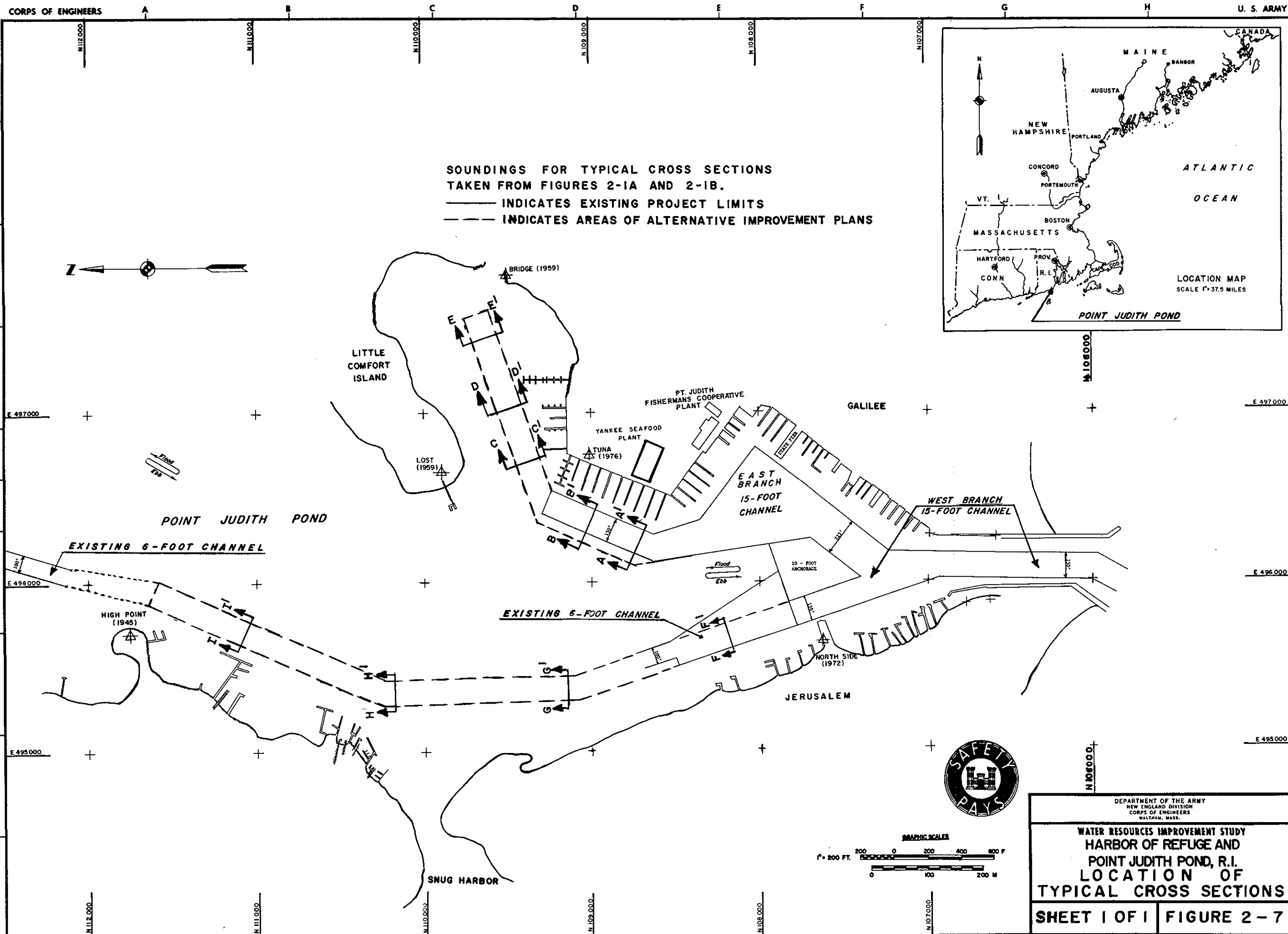
SEE FIGURE 2-7

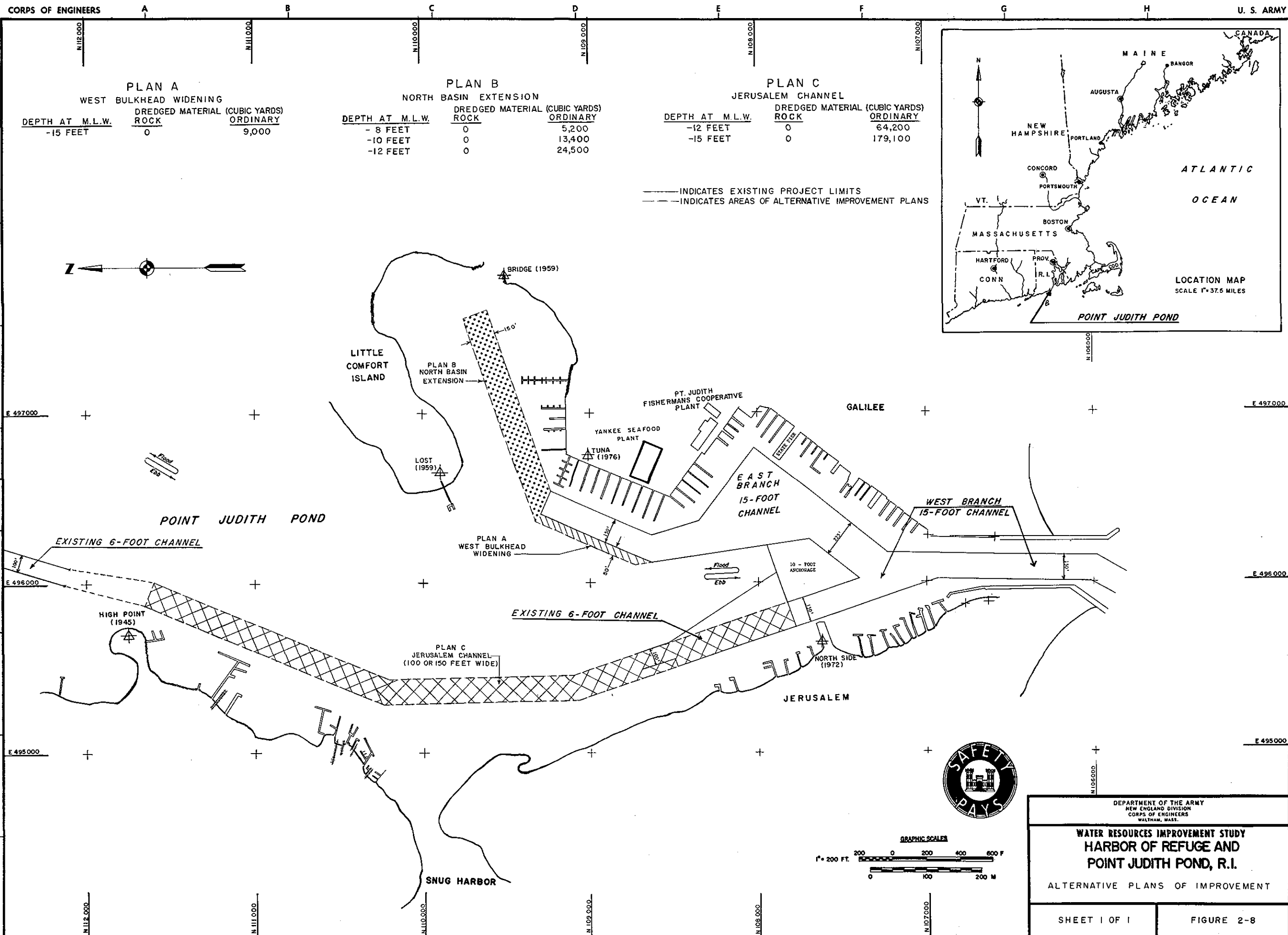
**NOTES:**

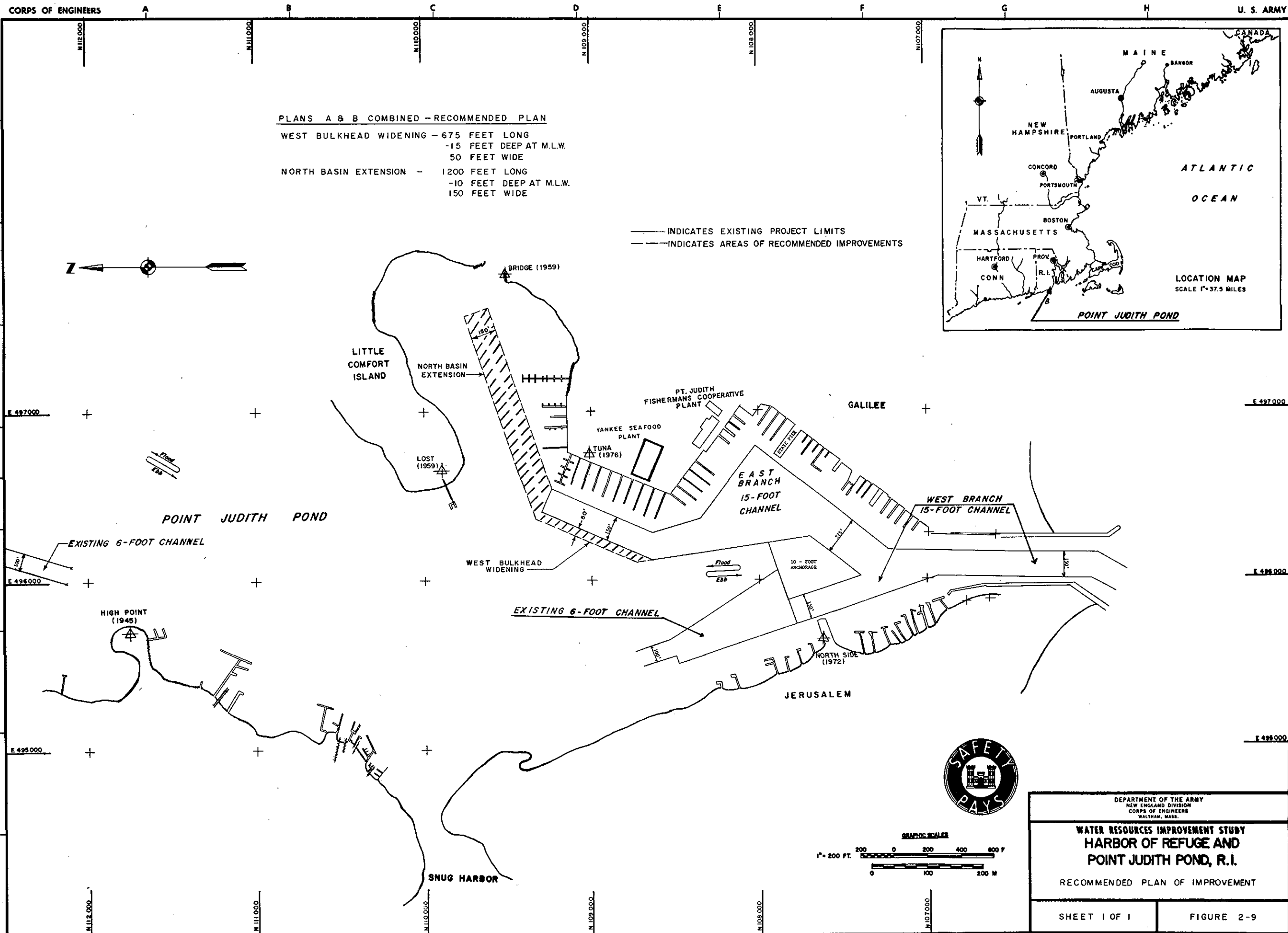
- SIDESLOPES ARE ASSUMED TO BE 1 ON 3 IN ORDINARY MATERIAL
- OVERDEPTH IS ONE FOOT IN ORDINARY MATERIAL



DEPARTMENT OF THE ARMY NEW ENGLAND DIVISION CORPS OF ENGINEERS WALTHAM, MASS.	
WATER RESOURCES IMPROVEMENT STUDY POINT JUDITH POND, R.I. TYPICAL CROSS SECTIONS	
SHEET 1 OF 1	FIGURE 2-6







## **APPENDIX 3**

### **ECONOMIC ASSESSMENT**



APPENDIX 3  
ECONOMIC ASSESSMENT

TABLE OF CONTENTS

	<u>PAGE NO.</u>
Introduction	3-1
Methodology	3-1
Historical Background	3-1
Landings and Value	3-2
Comparison to other New England Ports	3-4
Permanent Fleet at Point Judith (Galilee)	3-8
Biological Study Area	3-11
Economic Study Area	3-15
Linkage of Economic and Biological Study Areas	3-15
Institutional Setting	3-16
Existing Condition - Problems, Needs and Oppurtunities	3-18
Without - Plan Condition	3-19
With - Plan Condition	3-20
Economic Benefit Evaluation	3-20
Summary of Economic Analysis	3-27
Incremental Economic Justification	3-28

LIST OF TABLES

<u>TABLE</u>		<u>PAGE NO.</u>
1	Commercial Fisheries Landings and Value	3-2
2	Point Judith Ranking Among the 60 U.S. Ports	3-4
3	1985 Landings by Species	3-6
4	Point Judith Fleet	3-8
5	Offshore Fishing Vessels	3-8
6	Offshore Lobster Vessels	3-8
7	Inshore Fishing Vessels	3-10
8	Inshore Lobster Vessels	3-10
9	Growth in Point Judith Fleet	3-11
10	Fish Landed by Point Judith Co-Op Fleet	3-12
11	Vessel Drafts - Point Judith Fleet	3-22
12	Incremental Economic Justification of Improvement Plans	3-28

## Introduction

The purpose of this section is to present estimates of economic benefits which accrue to the proposed improvement plans at Point Judith, Rhode Island. The process will begin with descriptions of the project area, the economic and biological study areas and the current institutional setting. With this set of existing conditions serving as a base, the most probable futures will be projected under the without-plan and with-plan conditions. The economic impacts under both sets of futures will be compared and the dollar value of economic benefits will be deduced.

## Methodology

Economic benefits are estimated in accordance with Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies, March 1983. Benefits to commercial fishing activities brought about by implementation of an improvement plan are defined as increases in net income to fishermen. Net increases may result from cost savings in harvesting the existing catch or from the change in total revenue due to increased catch minus the change in total cost required to harvest the increased catch. Total annual benefits which accrue to a plan are compared to the total annual costs of that plan in order to determine the economic feasibility or justification. A benefit/cost ratio of at least 1 to 1 is required for Federal participation in water resources improvement projects. If more than one plan has a benefit/cost ratio greater than one, then the plan with the greatest amount of net benefits, i.e. annual benefits minus annual costs, is selected. Benefits and costs are stated at the October 1988 price level and are converted to an average annual equivalent basis using the current Federal interest rate for water resource improvement plan evaluation of 8-7/8 percent.

## Historical Background

Between 1892 and 1915, the Corps of Engineers built three stone breakwaters on the western side of Point Judith to provide a Harbor of refuge for coastal shipping. In 1901 the town of South Kingstown built a permanent breachway between the great Salt Pond and Harbor of Refuge. In 1935 State piers were built at Galilee and Jerusalem, the villages on the east and west sides of the breachway, and a dredging project was undertaken so that fishing boats could use the piers. The present pattern of commercial fishing use at Point Judith originated in the late 1940's when the Point Judith Fishermen's Cooperative Association was founded. The port and its fleet developed rapidly in response to a strong demand for industrial fish caused by the failure of the west coast sardine fishery in the 1950's. Red hake and whiting were caught in large volumes for this fishery which peaked in 1956, then went into decline. However, Point Judith was not significantly affected by the downturn due to its strategic location near the productive fishing grounds of the Northwest Atlantic and

the ability of the fishermen to adapt to changes in market demand and resource availability. In 1985, the port of Point Judith accounted for 80 percent of Washington County landings and 55 percent of total statewide landings. The State of Rhode Island, Department of Environmental Management, Division of Coastal Resources owns most of the Galilee waterfront, manages the port, and leases out waterfront parcels to commercial fishing enterprises. State owned docking facilities include 45 piers extending out from a series of wooden and steel bulkheads.

#### Landings and Value

The port of Point Judith (Galilee) ranked fifteenth in the United States in 1987 in quantity of commercial fishery landings and also nineteenth in terms of the value of those landings. In New England, Point Judith was third in landings behind the ports of Gloucester, Mass. and New Bedford, Mass. and third in value after New Bedford and Gloucester. The following table and figures shows the actual landings and value statistics for Point Judith in comparison to the county and state.

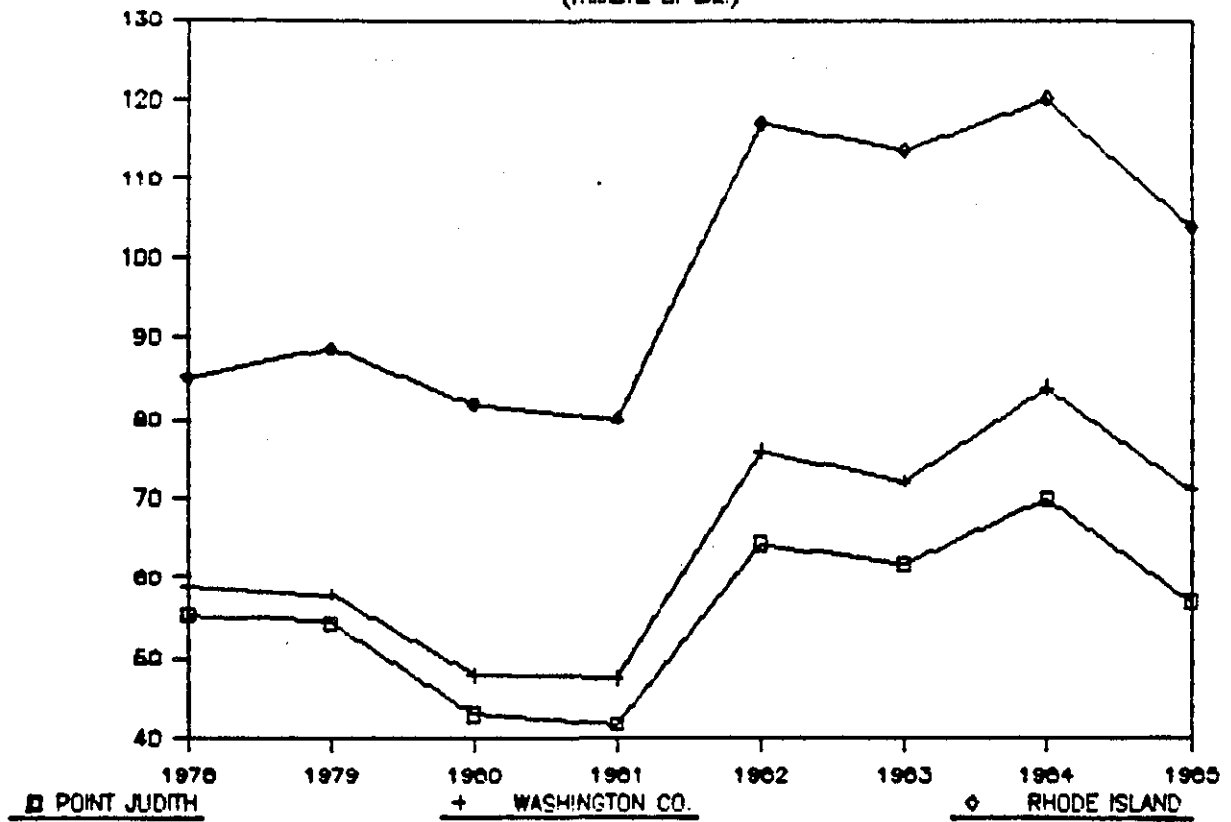
**TABLE 1**  
**COMMERCIAL FISHERIES LANDINGS AND VALUE:**  
**POINT JUDITH, WASHINGTON COUNTY, RHODE ISLAND**  
**(in millions)**

	<u>Point Judith</u>		<u>Washington County</u>		<u>Rhode Island</u>	
	<u>Lbs.</u>	<u>\$\$\$</u>	<u>Lbs.</u>	<u>\$\$\$</u>	<u>Lbs.</u>	<u>\$\$\$</u>
1987	46.6	27.4	65.8	46.3	100.2	77.4
1986	52.1	28.5	73.8	44.8	101.5	75.1
1985	56.8	28	70.9	38.6	103.8	70
1984	69.9	27.3	83.9	38.3	120.3	70.6
1983	61.6	25.5	72.1	34.7	113.9	66.7
1982	64.2	20.5	76	26.6	117.3	56.4
1981	41.7	13.2	47.6	16.9	80.1	44.4
1980	42.9	11.5	47.9	15.1	81.8	46.7
1979	54.3	11	57.8	13.3	88.7	36.4
1978	55.3	9.5	58.8	12.5	85.2	30.9

Some salient points from the table and figures are that Point Judith accounts for 47 percent of total statewide landings and has shown a greater rate of growth in the value of those landings than has occurred statewide. Landings and value data are not readily obtainable for Point Judith prior to 1978, but over the 1978-1985 period the value of landings increased by nearly 200 percent while the statewide increase was 150 percent. It is informative also to trace the performance of landings and value at Point Judith over this period in terms of rank among the 60 major United States ports as compiled by the National Marine Fisheries Service.

# ANNUAL LANDINGS

(millions of lbs.)



# VALUE OF LANDINGS

(millions of dollars)

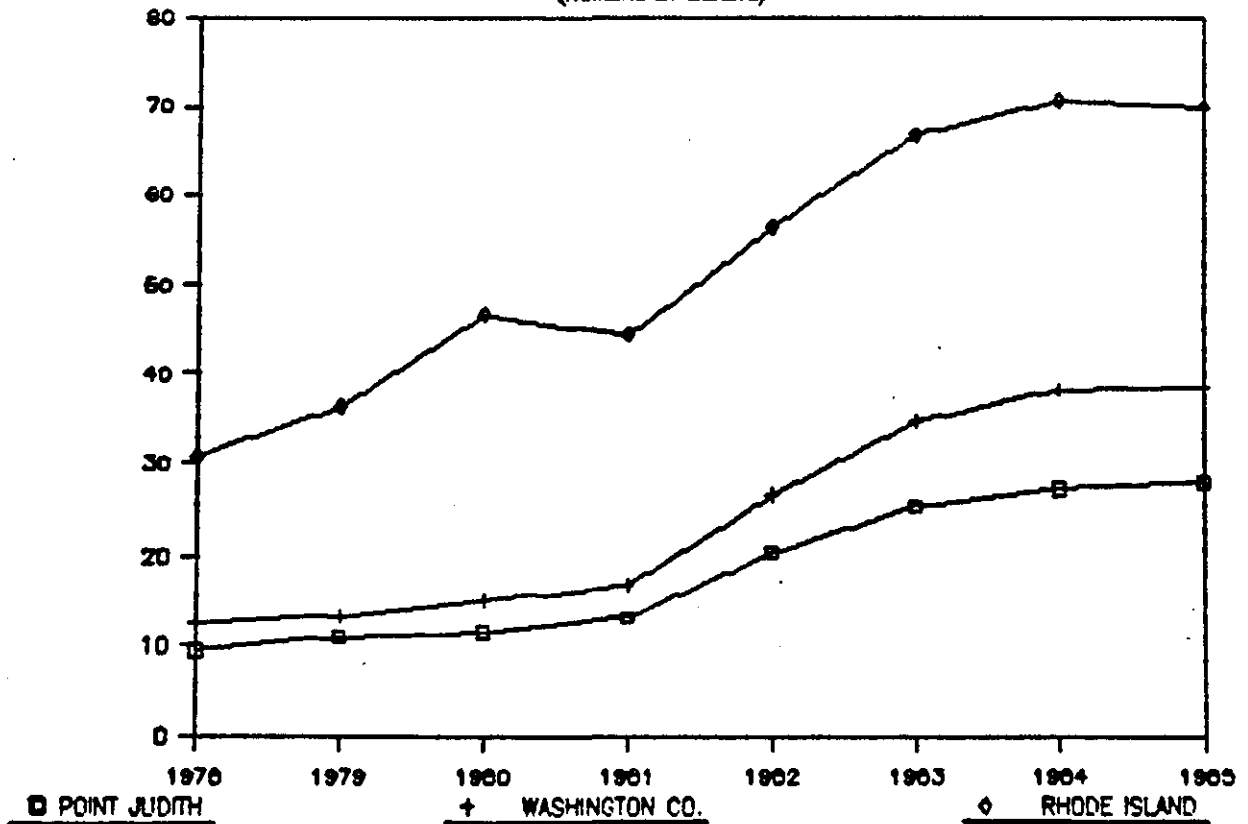


TABLE 2  
PORT OF POINT JUDITH, RHODE ISLAND  
RANKING AMONG THE 60 UNITED STATES PORTS

	<u>Landings</u>	<u>Value</u>
1987	15	19
1986	13	15
1985	12	12
1984	10	12
1983	11	13
1982	12	15
1981	19	35
1980	16	32
1979	14	34
1978	13	33

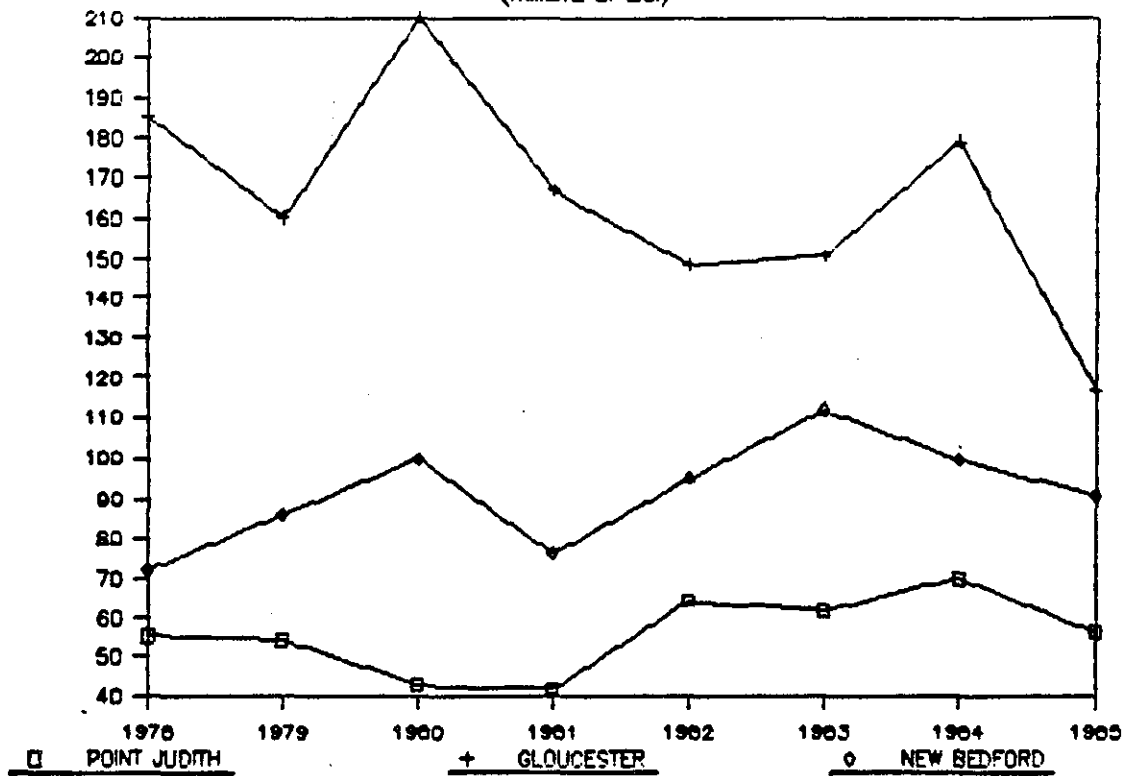
While the port's rank in landings has remained relatively stable over the past eight years, its position in value took a major leap of improvement from 1981 to 1982.

#### Comparison to other New England Ports

In order to determine the actual port specifics for Point Judith, it is necessary to compare it to other large New England ports. The ports chosen for comparison are Gloucester, Mass., which ranked ninth in landings and fourteenth in value among United States ports for 1987 and New Bedford which ranked eleventh in landings and first in value. Figures 3 and 4 show graphical comparisons of the 3 ports in terms of landings and value. Partly because of its smaller size, but also because of the species it lands Point Judith has exhibited comparatively less volatility in movements of landings and value over the recent past. The one way to gain insight into the operations and specialities of the three ports is to examine the species, volumes and price per pound that constitute total landings. Since county data is more readily available in detail than port data, county statistics will be used as indicators for the three ports. This will in no way compromise the analysis as Point Judith accounts for 80 percent of Washington County, R.I. landings, Gloucester accounts for 98 percent of Essex County, Mass., and New Bedford accounts for 94 percent of Bristol County, Mass.

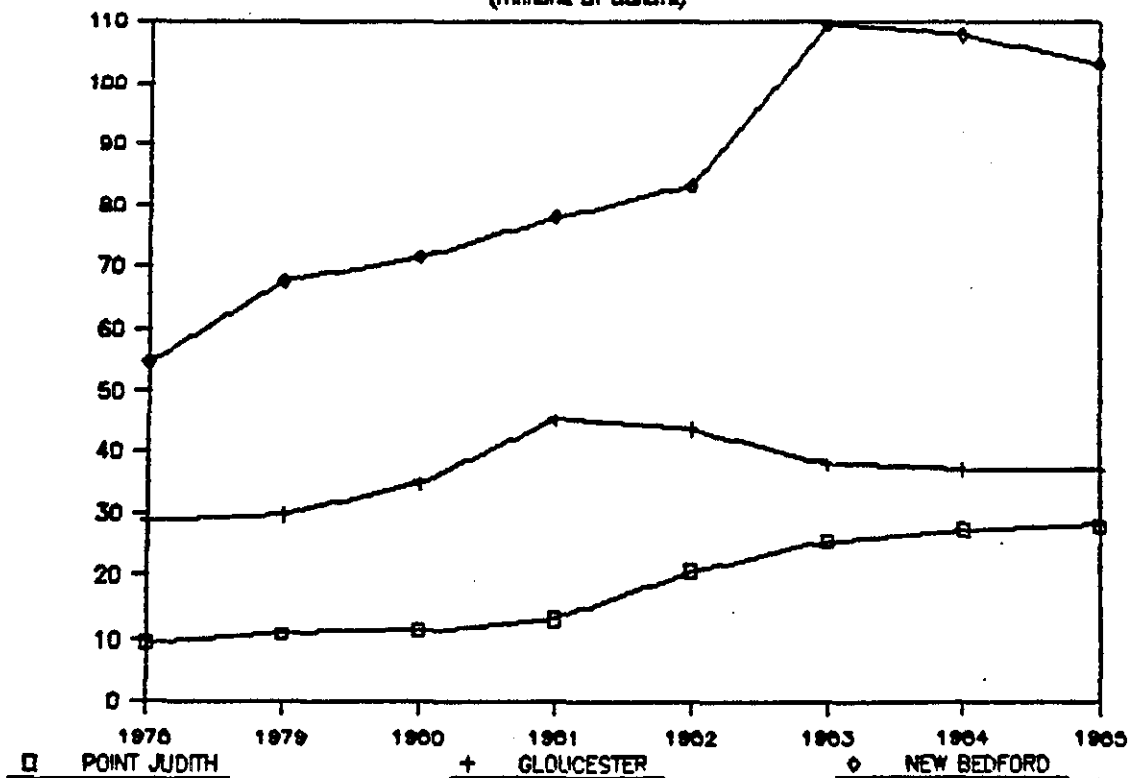
# ANNUAL LANDINGS

(millions of lbs.)



# VALUE OF LANDINGS

(millions of dollars)

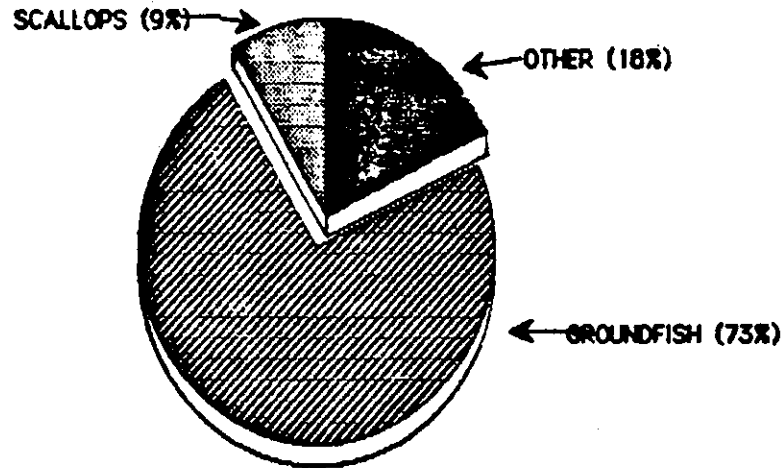


**TABLE 3**  
**1985 LANDINGS BY SPECIES**

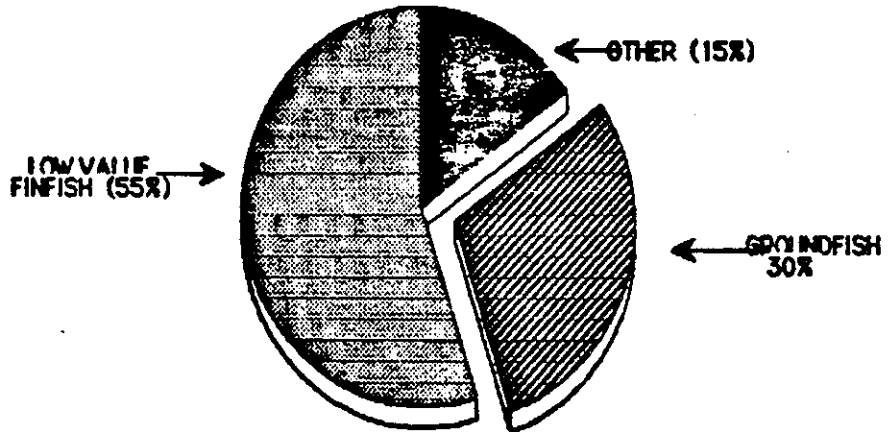
	<u>Washington County, RI</u> (Point Judith)		<u>Essex County, MA</u> (Gloucester)		<u>Bristol County, MA</u> (New Bedford)	
<b>TOTAL LANDINGS (LBS)</b>	70,889,500		119,111,500		96,368,500	
	<u>PERCENT</u>	<u>\$/LB.</u>	<u>PERCENT</u>	<u>\$/LB.</u>	<u>PERCENT</u>	<u>\$/LB</u>
Flounder	20%	\$.80	8.5%	\$.90	37%	\$.92
Cod	2.6	.39	16.7	.42	32	.43
Haddock	<1	.72	4.9	.96	3.6	.84
Butterfish	10	.34	<1	.28	<1	.47
Whiting	18	.18	8.7	.16	<1	.24
Scup	7.7	.59	--	--	<1	.66
Pollock	<1	.19	16.8	.16	1.1	.15
Red Hake	1.3	.12	<1	.11	<1	.36
Herring	<1	.07	20	.04	<1	.09
Finfish (unclassified)	3.2	.09	9.9	.07	--	--
Squid	12.4	.28	<1	.28	4.4	.24
Scallops	<1	4.69	<1	4.33	9.3	4.85
Lobster	4.5	2.76	<1	3.52	<1	3.25

Interpretation of the data in Table 3 indicates the difference among the three ports in terms of targeted species. One similarity though is that groundfish, i.e., cod, haddock, and flounder, landings occur at all three ports. These are traditional New England species that have historically been harvested by local fleets in response to market demand. Prior to the passage of the Fisheries Conservation and Management Act (1976) these species were also heavily fished by foreign fleets, but since passage of this Act, which established the 200-mile limit, foreign pressure was eliminated and the species are managed by the New England Fisheries Management Council. Data for 1985 shows that New Bedford relied on groundfish for 73 percent of total landings, in Gloucester the percentage was 30 percent while Point Judith was less dependent on groundfish with a percentage of 23. The composition of landings remaining after groundfish at the three ports is a study of contrasts. Gloucester fishermen concentrate on large volumes of low value species such as: herring @ \$.04/lb. (20% of total landings), unclassified finfish @ \$.07/lb. (10%), pollock @ \$.16/lb. (17%) and whiting @ \$.16/lb. (9%). Conversely in New Bedford after groundfish there is only one high-valued specie to discuss which is scallops. Although scallops accounted for only 9.3 percent (8,940,600 lbs.) of total landings their value (\$43,387,000) was 41 percent of total landed value at the ex-vessel price of \$4.85/lb. Between these two port extremes is the Point Judith operation. After the groundfish catch, 52.6 percent of remaining landings are spread among three species of finfish and two species of shellfish. The species are: butterfish @ \$.34/lb (10%), squid @ \$.28/lb. (12.4%), whiting @ \$.18/lb. (18%), scup @ \$.59/lb. (7.7%) and lobster @ \$2.76/lb. (4.5%). The

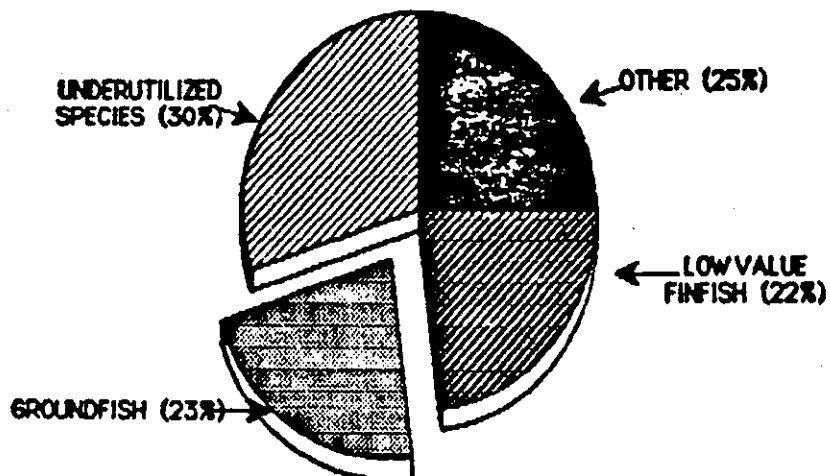
### TOTAL NEW BEDFORD LANDINGS



### TOTAL GLOUCESTER LANDINGS



### TOTAL POINT JUDITH LANDINGS





diversity and value of this component of the Point Judith catch is an important factor in the success of the port. Species are landed primarily for the domestic fresh fish market, but foreign markets are also utilized (squid) as are industrial outlets (whiting). The fishermen are very flexible inasmuch as they respond to changes in demand, seasonal fisheries, and most importantly fish for less popular underutilized species.

#### Permanent Fleet at Point Judith (Galilee)

According to current berthing lists for the port of Galilee, supplied by the Superintendent of State Piers, 196 vessels are assigned permanent berths. Of the total, 151 are commercial fishing vessels. The breakdown of the fleet is displayed in Table 4.

TABLE 4  
POINT JUDITH FLEET

<u>Type of Boat</u>	<u>Length</u>	<u>Number</u>
Offshore Fishing	48'-95'	72
Offshore Lobster	53'-85'	15
Inshore Fishing	38'-70'	14
Inshore Lobster	20'-51'	50
Charter	26'-45'	21
Sport Fishing	21'-45'	19
Party/Head	46'-85'	4
Excursion	62'	1

A detailed profile of the commercial fishing fleet can be obtained by examining the numbers of vessels in each length class and the type of hull construction material for the inshore and offshore vessel divisions.

TABLE 5  
OFFSHORE FISHING VESSELS

	<u>40-49'</u>	<u>50-59'</u>	<u>60-69'</u>	<u>70-79'</u>	<u>80-89'</u>	<u>90-99'</u>	<u>TOTAL</u>
Wood	1	1	11	13	2	1	29
Steel	0	2	9	18	13	1	43
TOTAL	1	3	20	31	15	2	72

TABLE 6  
OFFSHORE LOBSTER VESSELS

	<u>50-59</u>	<u>60-69</u>	<u>70-79</u>	<u>80-89</u>	<u>TOTAL</u>
Wood	-	2	1	-	3
Steel	1	2	5	2	10
Fiberglass	1	1	-	-	2
TOTAL	2	5	6	2	15

# POINT JUDITH FLEET

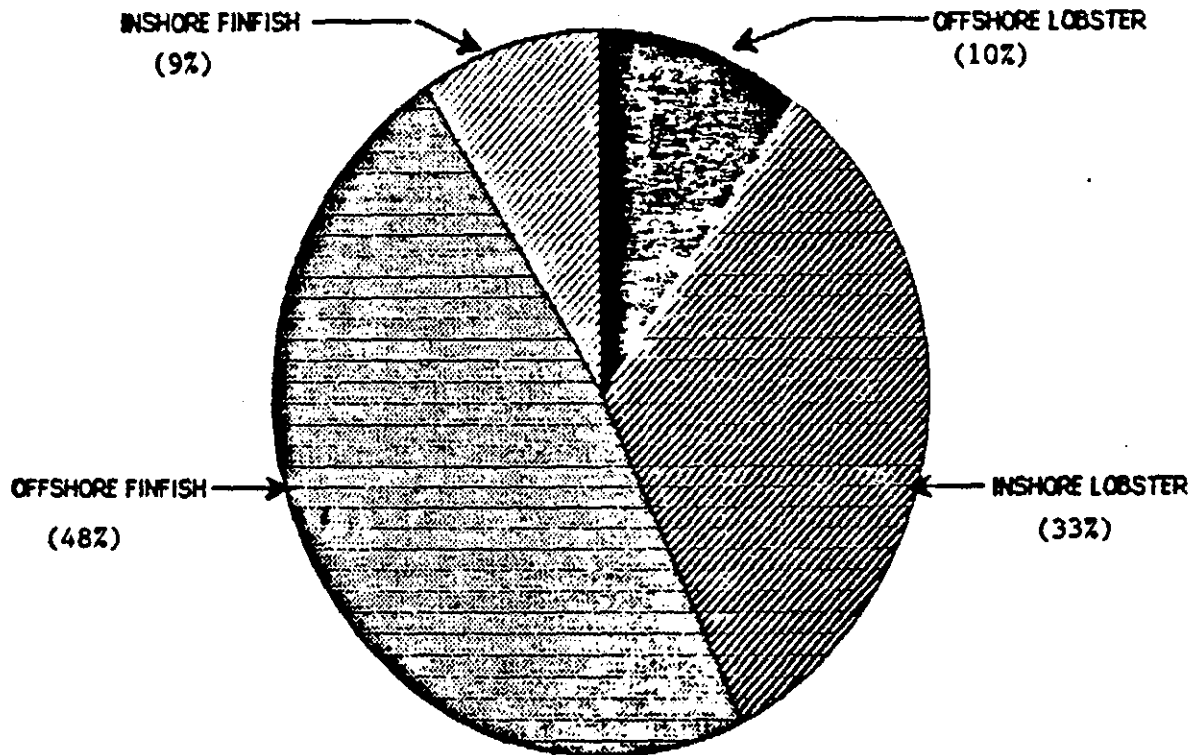


TABLE 7  
INSHORE FISHING VESSELS

	<u>20-29'</u>	<u>30-39'</u>	<u>40-49'</u>	<u>50-59'</u>	<u>60-69'</u>	<u>70-79'</u>	<u>TOTAL</u>
Wood	1	1	4	3	2	1	12
Steel	-	-	1	1	-	-	2
TOTAL	1	1	5	4	2	1	14

TABLE 8  
INSHORE LOBSTER VESSELS

	<u>20-29</u>	<u>30-39</u>	<u>40-49</u>	<u>50-59</u>	<u>TOTAL</u>
Wood	1	12	7	-	20
Steel	-	1	-	-	1
Fiberglass	4	6	17	1	28
Aluminum	-	1	-	-	1
TOTAL	5	20	24	1	50

Nearly one-half (48 percent) of the fleet is made up of large offshore draggers. Draggers are actually otter-trawlers and the two names will be used interchangeably throughout this report. The trend in the offshore fleet, especially since passage of the FCMA in 1976 and the availability of National Marine Fisheries Service vessel and equipment financing plans, has been toward larger steel hulled vessels. Sixty percent of these vessels at Point Judith are steel and vessel lengths are concentrated between 70 and 90 feet. A recent example of the offshore fleet upgrading is a newly constructed 96 foot steel dragger built for a Port Judith owner. The vessel, built in Alabama, has a one million pound fish hold capacity, a 30 ton refrigerated seawater system and began operating out of the Coop in February 1986. These offshore draggers usually make three day trips. In contrast the inshore finfish vessels, which comprise 9 percent of the fleet, are nearly all older wooden boats, are between 40 and 60 feet in length and make single day trips. The lobster boat fleet is also divided into offshore and inshore components. The 15 offshore lobster vessels constitute 10 percent of the total Point Judith fleet. Two-thirds of these boats are steel, the remainder wood or fiberglass and they range in length from 60 to 80 feet. These boats fish for lobsters from three miles out to the edge of the Continental Shelf. The edge of the Shelf drops from 50 to 250 fathoms and is known locally as the canyon fishing area. The remaining group in the Point Judith fleet is the inshore lobster boats who account for one-third of the total fleet. These boats run between 30 and 50 feet in length, are either wooden or fiberglass and fish in State of Rhode Island waters from shore to three miles out.

The total fleet at Point Judith has exhibited growth over the past ten years not only in the number of vessels but also in vessel size. In 1974, a total of 128 draggers and lobster boats used the port, 74 of which

had permanent berths. In 1985, 186 vessels used the port, 151 of which had permanent berths and the remainder transient permits. The following table shows how the lengths of the boats have increased over the past 11 years.

**TABLE 9**  
**GROWTH IN POINT JUDITH FLEET**

<u>Length</u>	<u>Number of Vessels</u>	
	<u>1974</u>	<u>1985</u>
20-29 feet	10	13
30-49	43	61
50-69	43	43
70-100	32	69

In addition to the advantageous location of Point Judith in relation to the fishing grounds, there are three other reasons for this fleet growth. The first is the commitment of the State of Rhode Island to the development of Point Judith as a fishing port as seen in the increase in the number of permanent berths from 74 in 1974 to 151 in 1985. All berths and bulkheads were built by the state. Secondly, the existence of the prosperous Point Judith Fishermen's Cooperative has fostered fleet growth by developing markets for fresh fish, developing new outlets for under-utilized species and providing fleet support in terms of offloading and sales of ice and fuel. Thirdly, the FCMA, with its dual purpose of preventing foreign fleet overfishing and managing for resource sustainability, provided an incentive for existing owners to move up to larger more modern vessels and for crewmen and others to purchase their first vessels.

#### Biological Study Area

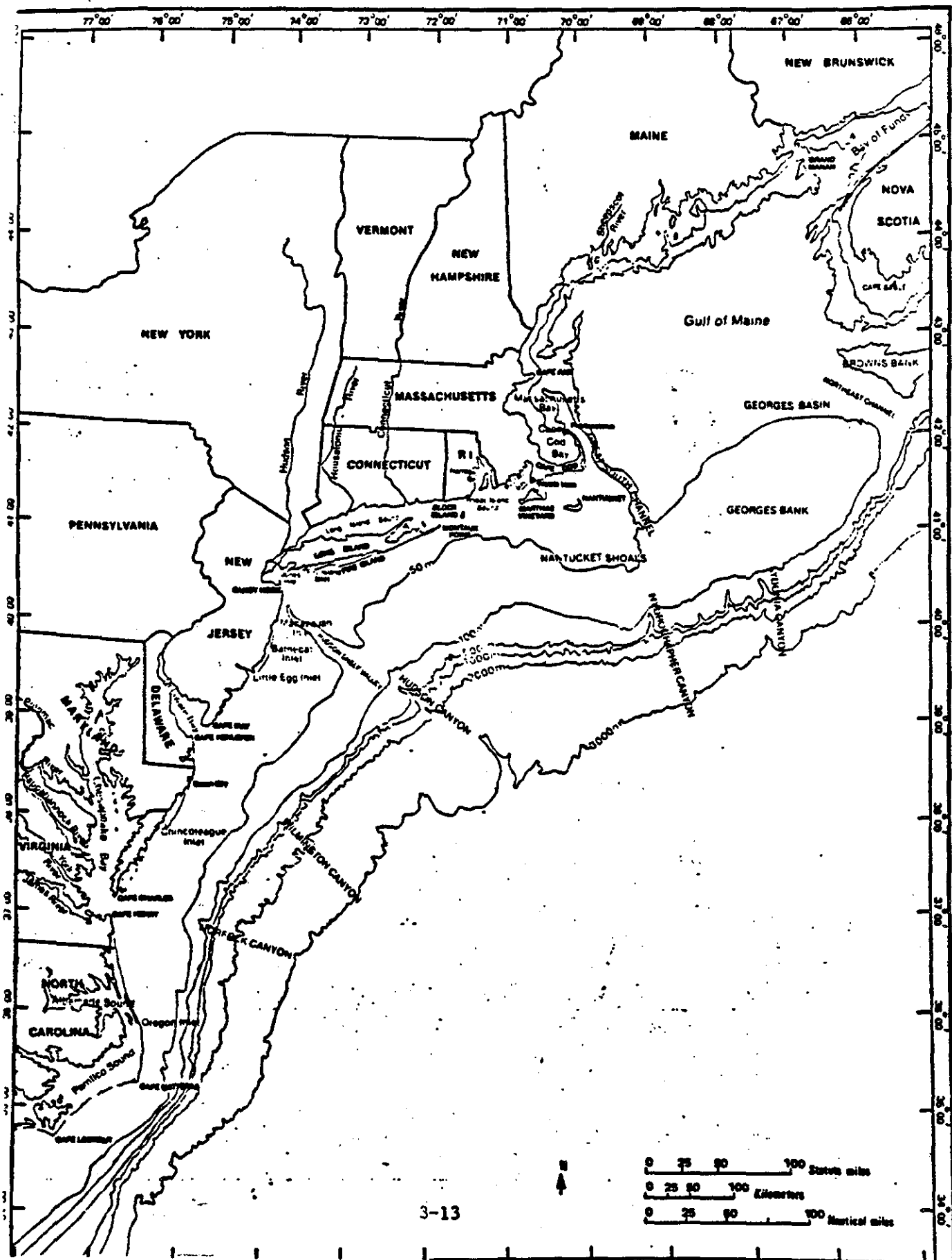
The biological study area for Point Judith is actually made up of a number of specific smaller areas. The areas are based on the species being fished, the time of the year, and the type of vessel and gear. A list has been provided by the Point Judith Fishermen's Coop which shows the types of finfish and shellfish landed and their principal harvesting seasons. Two maps are also provided. The first shows the general geographic locations such as: Rhode Island Sound, Block Island Sound, Georges Bank, Nantucket Shoals, and the Continental Shelf. The second shows the National Marine Fisheries Service Statistical Areas off the southern New England coast. The simplest method to denote the biological areas is to follow the movements of the four divisions of the Point Judith fleet. The offshore dragger fleet (otter trawlers) fish the grounds within the area bounded by Nantucket Island to the north and to the south by central Long Island and extending seaward to the edge of the Continental Shelf. This area includes Nantucket Shoals and the southern edge of Georges Bank. These grounds are included in NMFS statistical areas 611, 613, 539, 537, and 526. The inshore dragger fleet, mostly

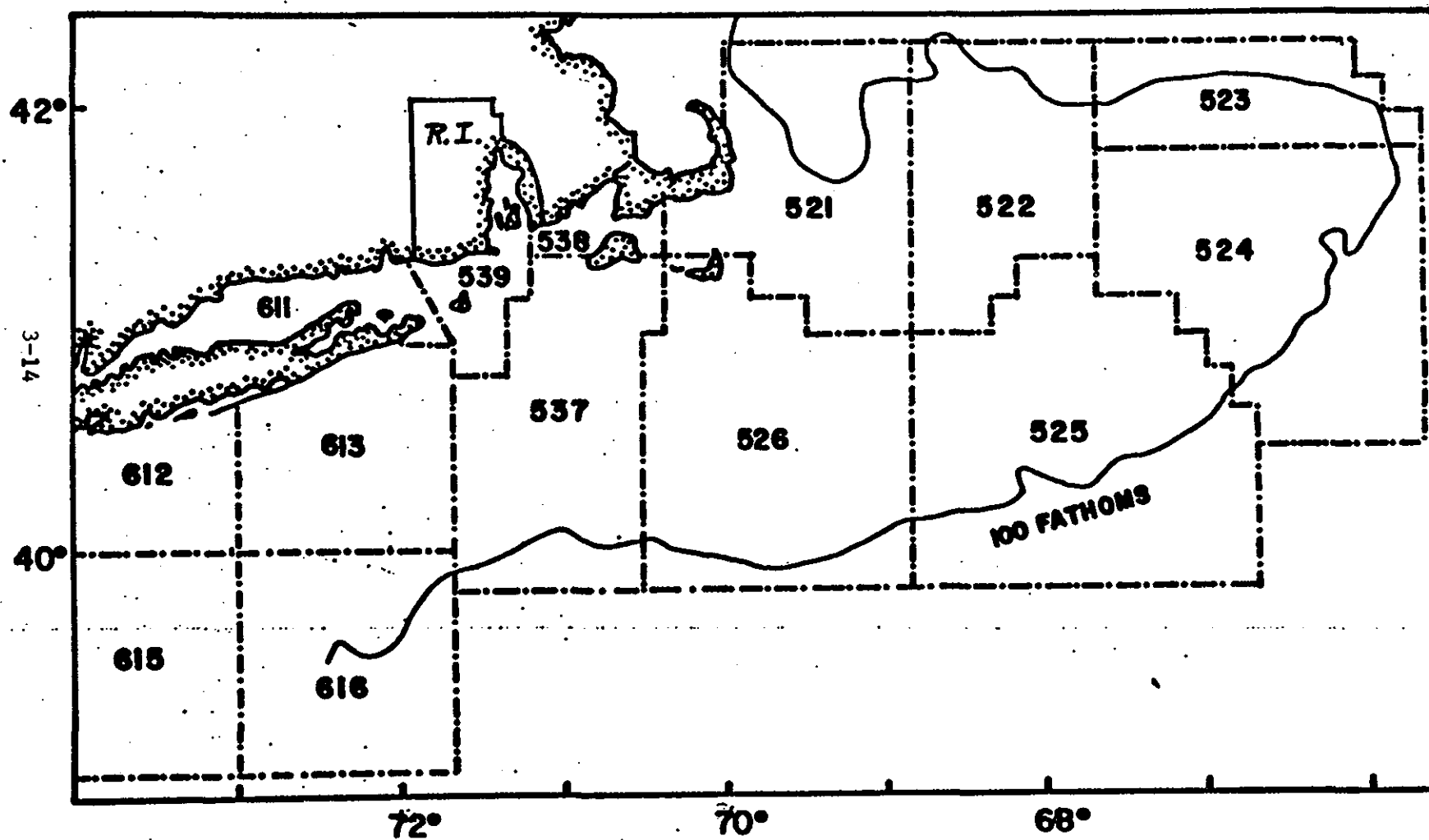
TABLE 10

**FRESH-FISH PRODUCTS:**

The table below indicates the broad range of fresh-fish landed by the Point Judith CO-OP fleet.

Examples of North American Fresh-Fish Landed by the Point Judith Fishermen's Cooperative				
Item:	Generally Used North American Names:	Scientific Name:	Additional Names:	Principal Harvesting Season:
1	American angler	<i>Lophius americanus</i>	Goosefish, monkfish	JAN thru DEC
2	Bass, striped	<i>Morone saxatilis</i>	Striper, rock, rockfish	MAY thru JUL
3	Butterfish	<i>Peprilus (Poronotus) triacanthus</i>	Dollarfish, shiner	APR thru JAN
4	Cod, Atlantic	<i>Gadus morhua</i>		DEC thru MAY
5	Dogfish	<i>Squalus acanthias</i> <i>Mustelus canis</i>	Spiny dogfish Smooth dogfish	APR thru NOV APR thru NOV
6a	Summer Flounder	<i>Paralichthys dentatus</i>	Flounder, fluke	JAN thru DEC
6b	Windowpane	<i>Scophthalmus aquosus</i>	Brill, spotted flounder sand dab, sand flounder, "turbot"	JAN thru DEC
6c	Witch flounder	<i>Glyptocephalus cynoglossus</i>	Gray sole, Craig fluke	JAN thru DEC
6d	American plaice	<i>Hippoglossoides platessoides</i>	American dab, sole, Canadian plaice, plaice, blackback, flounder, pile	JAN thru DEC
6e	Yellowtail flounder	<i>Limnada ferruginea</i>	Yellowtail, rusty dab	JAN thru DEC
6d	Winter Flounder	<i>Pseudopleuronectes americanus</i>	Blackback, sole, dab, lemon sole, flounder	JAN thru DEC
7	Herring, Atlantic	<i>Clupea harengus harengus</i>	Sea herring	JAN thru DEC
8	Lobster	<i>Homarus americanus</i>	American lobster, North American lobster, Canadian lobster, Maine lobster	MAR thru DEC
9	Mackerel, Atlantic	<i>Scomber scombrus</i>	Mackerel	MAY thru NOV
10	Menhaden, Atlantic	<i>Brevoortia tyrannus</i>	Pogy	MAY thru NOV
11	Ocean pout	<i>Macrozoarces americanus</i>	Eelpout, mutton fish, "conger eel"	FEB and MAR
12	Pollock	<i>Pollichius virens</i>	American pollock, Boston bluefish	APR thru AUG
14	Red hake	<i>Urophycis chuss</i>	Ling, squirrel hake, white hake, mud hake	JAN thru DEC
15	Scup	<i>Stenotomus chrysops</i>	Porgy	APR thru DEC
16	Silver hake	<i>Merluccius bilinearis</i>	Whiting	JAN thru DEC
17	Skate	<i>Raja spp</i>		JAN thru DEC
18	Squid, long-finned	<i>Loligo pealei</i>		JAN thru DEC
19	Squid, short-finned	<i>Illex illecebrosus</i>		JAN thru DEC
20	Swordfish	<i>Xiphias gladius</i>	Billfish	JUN thru SEP
21	Tautog	<i>Tautoga onitis</i>	Black-fish	JUL thru AUG
22	Tilefish	<i>Lopholatilus chamaeleonticeps</i>		FEB thru JUN





National Marine Fisheries Service Statistical Areas off Southern New England.

dayboats, fish the grounds in Block Island and Rhode Island Sounds and in the area east of Block Island. This area roughly corresponds to NMFS area 539. The offshore lobster fleet fishes regularly between the 60 and 250 fathom contour along the edge of the Continental Shelf from Long Island to the southern side of Georges Bank. The inshore lobster fleet sets their pots close to the shore and in Narragansett Bay in the spring, then in the summer and fall move the pots out into Rhode Island and Block Island Sounds in areas which are not fished by the trawlers. An additional area fished by the trawlers is Nantucket Sound during the squid season.

#### Economic Study Area

The area where the majority of economic impacts occur is the village of Galilee. Impacts will also be felt in the village of Jerusalem across the Point Judith Salt Pond from Galilee. A secondary economic area is formed by the towns of Narragansett and South Kingstown where the majority of the fishermen and support-industry employees reside. The main reason why the impacts are localized is the existence of the Coop. The current count of coop member boats is 91 and there are a total of 184 members counting captains and crewmen. The Coop handles 75 percent of the fish landed at Point Judith, with three other buyers and a few private outlets accounting for the remainder. Fuel and ice can be purchased through the Coop and at other facilities in Galilee and marine repair facilities are available on the Jerusalem side of the pond at Snug Harbor. Because the port is completely self-sufficient the economic impacts of an improvement plan will be almost entirely localized in Galilee and Jerusalem and an income-multiplier effect will be realized in the towns of South Kingstown and Narragansett.

#### Linkage of Economic and Biological Study Areas

The process by which the two areas are linked is one of local market economy based on inputs and outputs. The underpinnings of this economy are both natural and man-made. On the natural side is the location of Point Judith. The port is near fishing grounds which offer many different species of finfish and shellfish to harvest. The man-made contributions are the commitments of the State of Rhode Island and the Fishermen's Coop in providing the infrastructure required for the viability and growth of the port. The state has provided and continues to provide the basic physical requirements of bulkheads, piers, docks, etc. In addition, the state operates the port and performs the future planning function. The buying and marketing function is provided mainly by the Coop, with a few other companies also buying fish. The actual linkage of the economic and biological study areas operates as follows. Fish (outputs) harvested from the biological study area are sold locally in the economic study area. The revenues realized by the fishermen are in turn used to purchase the productive inputs (fuel, bait, repairs) and the necessities of life from the local economy. Since fish is a renewable food resource, managed for sustainability and landed locally it insures a continual linking of the biological and economic study areas through the input/output process.

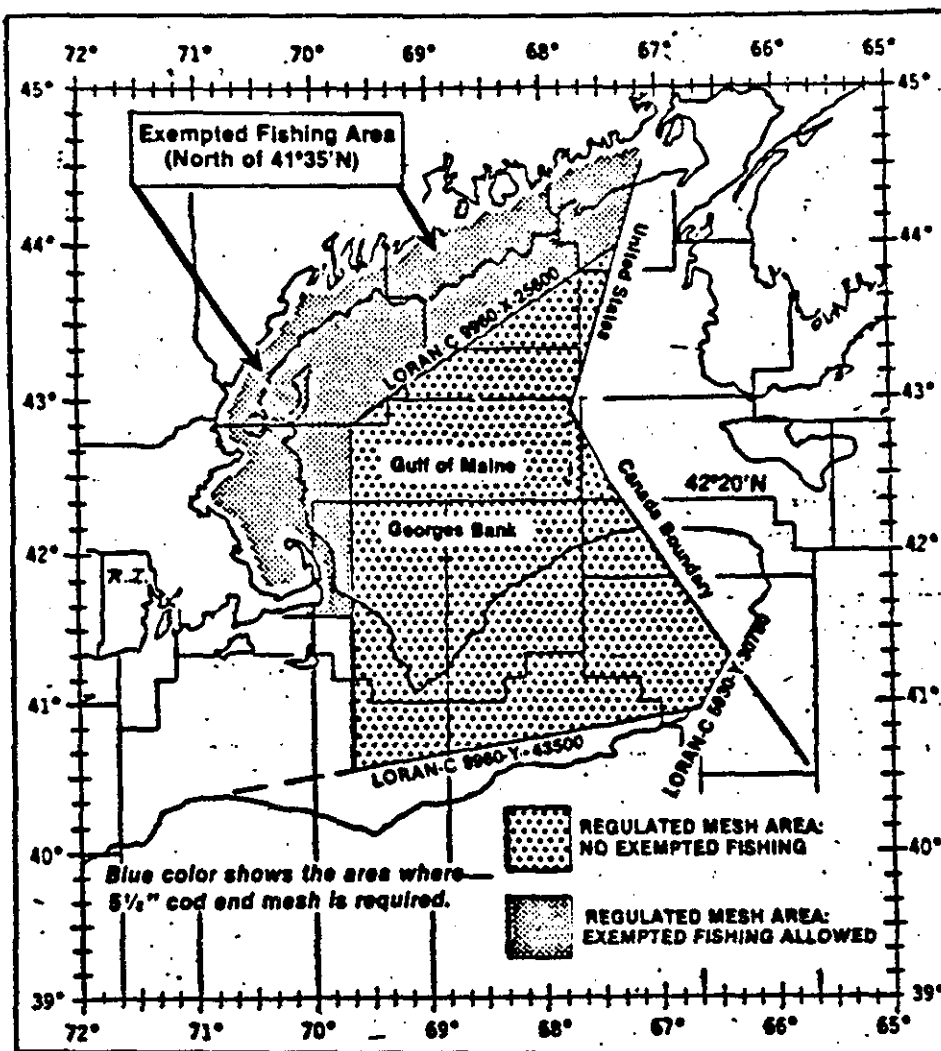


### Institutional Setting

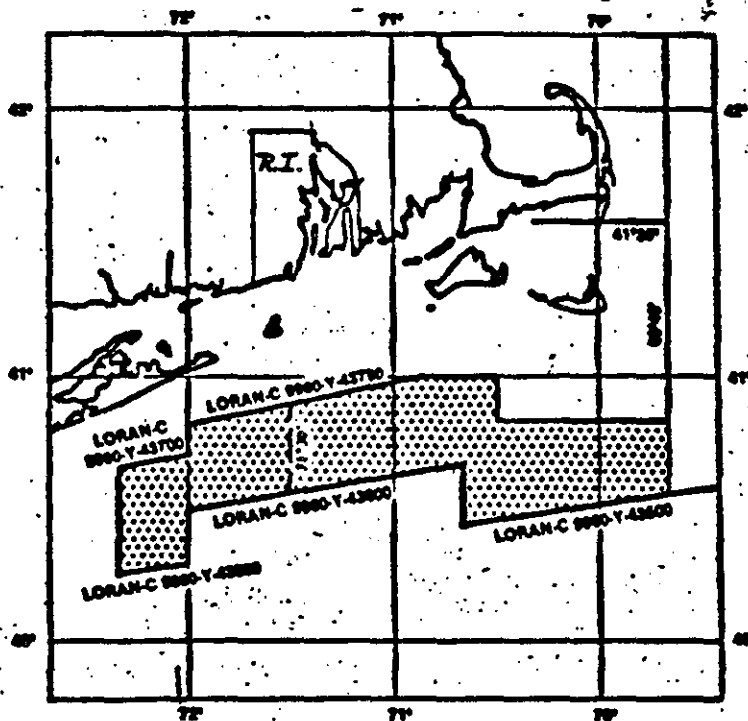
The institutional setting at Point Judith is made up of three components. The first is the management of the port by the State of Rhode Island. As mentioned previously, the state has built all of the bulkheads, piers and docks, assigns permanent and transient berths, maintains the port and plans future development.

The second component is the Point Judith Fishermen's Coop, the dominant buyer and marketer of landings in the port. It handles 75 percent of the port's landings and has 184 members and 91 member vessels. Coop members are actually Coop owners and receive their shares of profit in the form of payments from the Coop for fish landed. The goal of the Coop administrators is to return to the members as much profit as possible by operating the Coop as efficiently as possible and getting the highest possible price for the fish they market. The Coop follows conservative financial practices and withholds slightly more cash than is necessary from its members during the year. At the end of the year excess cash balances are then refunded to members in the form of a patronage dividend. The Coop markets fresh fish to such cities as Boston, New York, Baltimore, and Philadelphia. In addition, Coop landings are also sold to processing firms from Massachusetts to North Carolina. The Coop operates seven days a week in order to offload vessels and provide ice, fuel and marine supplies to assure quick turnaround times. Since it was founded in 1947, the Point Judith Fishermen's cooperative has risen to be counted among the most successful fishermen's cooperative in the world.

The third component of the institutional setting is the set of rules and regulations currently in effect that govern the overall harvesting effort of the fleet. In September of 1986, the New England Fisheries Management Council released the new groundfish management plan for the New England groundfish fleet. The plan, titled the Atlantic Demersal Finfish Plan (ADF), concentrates primarily on the Gulf of Maine and Georges Bank areas and uses the methods of a 5-1/2" cod end net mesh size, minimum fish size, and a small net mesh exempted fisheries program. The ADF also contains rules for southern New England waters where the Point Judith fleet operates. These rules are : (i) There is no minimum net mesh size in southern New England waters. This differs from the 5-1/2" cod end mesh for the Gulf of Maine and Georges Bank. The Council recognized that fishermen in southern New England waters, particularly Rhode Island fishermen, concentrate on small net species such as squid, butterfish and whiting. (ii) There will be a seasonal closure of an area of fishing ground extending from south of eastern Long Island to just beyond Nantucket. The timing of the closure is initially scheduled to be: East of longitude 71°30', March 1 through early May; West of longitude 71°31', April 1 through early May (see map). This area will be closed to all mobile trawl gear, except mid-water gear operating under permit with a zero bycatch. This closure area, which is 25 to 35 fathoms deep is a spawning area for yellowtail flounder. The New England Council's



**Southern New England-Middle Atlantic area  
closure. See text for details.**



increase is spawning potential and the long term sustainability of the resource. (iii) The third feature is that fishermen who use small mesh to fish for species such as squid, whiting butterfish, red hake, dogfish and mackerel can do so after registering with NMFS and following their list of operational and accounting guidelines.

#### Existing Condition - Problems, Needs and Opportunities

There are 5 problems confronting commercial fishing operations at Point Judith: (i) inadequate offloading space, (ii) inadequate berthing space for offshore draggers and inshore lobster boats, (iii) inadequate depth in the east branch channel opposite the West Bulkhead, (iv) inadequate depth in the North Basin area and (v) inadequate depth in the west branch channel that runs from the State Pier up to High Point at Snug Harbor on the Jerusalem side of Point Judith Pond. The needs which stem from these problems and the opportunities to satisfy those needs will be discussed for each specific location at Point Judith.

North Basin (Galilee) - There are five permanent docks at this location at which are berthed charter and party boats, sport fishing boats, lobster boats, and inshore draggers. The State of Rhode Island has addressed the need of additional berthing space in its plans to extend the existing steel bulkhead 1,000 feet eastward terminating at Great Island Road and to build 2 new piers (TT and UU). An additional 68 boats will be accommodated at these piers. The Corps' improvement plan in this area is to extend the east branch channel eastward into the North Basin area to provide access to the new piers TT and UU. The proposed channel will be 10 feet deep and 150 feet wide.

West Bulkhead Area (Galilee) - There are three problems at this location: inadequate offloading space, a shortage of berthing space for offshore draggers, and navigation difficulties caused by insufficient channel width and depth. The State of Rhode Island has addressed the offloading inadequacy and shortage of berthing space in its plan to remove two existing dilapidated docks (EE and FF), install steel sheet bulkhead at this location and build heavy duty replacement dock EE. The inshore lobster and finfish boats currently assigned to docks EE and FF would be reassigned to the newly constructed docks in the North Basin. The new heavy duty dock EE will be used for offloading and also for 20 offshore finfish vessels in the 70 to 90 foot class. In addition, the Coop is now constructing a new facility for the offloading of fish. It will utilize 4 docks, formerly used for berthing, exclusively for offloading. The berthed vessels will be relocated to the new dock EE and to the North Basin. The navigational difficulties in the east branch channel opposite the West Bulkhead area are manifested by the incidence of hull damage, groundings and congestion delays while waiting to offload. This problem is exacerbated by the trend toward larger offshore vessels. The Corps' plan of improvement at this location is to deepen the existing channel to a uniform 15 feet at mean low water and to extend its width to 200 feet.

Snug Harbor (Jerusalem) - The existing channel that runs from the State dock in Jerusalem up to High Point at Snug Harbor has authorized dimensions of 6 feet deep by 100 feet wide. There are varying depths in this channel above and below 6 feet and a shoal area of less than 5 feet. The depth at the two marine repair facilities at Snug Harbor is 12 feet. The problem is that some of the large offshore vessels can only navigate this channel at high tide and even then it is risky. As the vessels become larger, it is apparent that some will not be able to utilize the repair facilities at their home port and will incur the additional expense of traveling elsewhere. The Corps' plan of improvement for this channel is to increase its dimensions to 15' deep by 150' wide. This will allow the current fleet and future additions to utilize the channel safely at all tidal stages. The improvement also coordinates perfectly with future plans of the State of Rhode Island for the port. When the North Basin project is completed, all possible locations for docking and offloading will be completely utilized on the Galilee side of Point Judith Pond. Long range State plans are for the construction of 2 heavy-duty docks at Jerusalem north of the State marine experiment station. These docks will be used for berthing only and will accommodate 10-12 offshore vessels each.

#### Without-Plan Condition

The without-plan condition is the most likely condition expected to exist in the future in the absence of any Federal plan of improvement formulated to reduce or eliminate existing problems. Under the without-plan condition at Galilee, the State of Rhode Island is expected to implement the West Bulkhead and North Basin improvement projects and the Point Judith Fishermen's Coop is expected to complete and operate their new offload facility. The problems of inadequate offloading facilities and shortage of berths will be alleviated by the state and Coop plans. However, navigational inefficiencies will remain in the East Branch Channel adjacent to the West Bulkhead and in the North Basin. These inefficiencies, caused by inadequate channel width and depth, result in damage from grounding and collisions and delays from the tides and congestion. The State of Rhode Island does not plan to perform any work in the West Branch Channel (Jerusalem) in the near future therefore the without-plan condition is simply a continuation of the existing condition. The larger vessels will continue to have difficulty reaching the repair facilities at High Point and many will need to travel elsewhere for repairs. As the Point Judith fleet continues to increase in both number and vessel size these navigational inefficiencies will have an increasingly negative impact on fleet operations.

There are 4 specific elements that are addressed under the without-plan condition: habitat condition, institutional setting, nonstructural measures, and market conditions. The habitat condition is very difficult to project into the future especially when many different species are landed and when the fleet has a history of flexibility in fishing for new, different or underutilized species depending on availability, demand, new

markets or management plans. The habitat condition will not be addressed directly as no benefits will be claimed for increased landings. If the habitat condition were not sufficient in the Point Judith fishing grounds, it is doubtful that the fleet would continue to expand and that the state would continue investment in shorefront infrastructure.

The institutional setting will change only as the fishery management plans are modified by the NEFMC. Access to the fishery will remain unlimited and it will be regulated by market conditions in the form of net returns. The infrastructure of the port will improve based on the State of Rhode Island's plans of additional berthing and offloading areas.

Nonstructural measures have been assessed as alternatives to the Point Judith improvements but have been rejected for the following reasons. There is a well established buying and support infrastructure as typified by the Coop. The port is a success and is the largest in the state. The other Rhode Island ports are under State management and have plans formulated for them to accommodate their local fleets and specific port uses. Galilee cannot be replicated elsewhere in Rhode Island.

Market conditions will most probably continue the trend of the recent past (10 years). The fleet will fish for species which are marketable and the Coop will continue to open up markets for fresh fish and under-utilized species. The fleet will continue to experiment with new species as they have in the past. It is assumed that the port will continue to grow based on its record since 1947 and due to the facts that the biological condition of the resource and institutional management plans will both support this growth.

#### With-Plan Condition

The with-plan condition involves the improvement plan of the Corps that was discussed earlier under the Problems, Needs and Opportunities section. The positive impacts expected to occur under the with-plan condition will be quantified and stated as National Economic Development (NED) Benefits. Each geographical area of improvement will be evaluated independently. A number of inputs, both primary and secondary, will be employed in the economic benefit evaluation and each will be cited at the appropriate time.

#### Economic Benefit Evaluation

West Bulkhead Area (Galilee) - As mentioned previously, the State of Rhode Island plans to remove existing piers EE and FF, install a steel bulkhead, dredge to 15 feet mean low water in the pier area and construct heavy duty replacement pier EE. The gains in offloading area and berthing area for the offshore finfish vessels will accrue directly to the State's work. The Corps' improvement project in this area involves the widening of the east branch channel in front of the West Bulkhead from its existing 150 foot width to 200 feet. The need for the Corps improvement is because

the depth on the western edge of this 150' x 15' channel quickly recedes to between 4.4' and 8.2'. The tidal range in this area is 3 feet. The navigational problem in this area affects fully loaded offshore draggers who offload in this area. These vessels encounter difficulties in maneuvering to their berths, to the offload docks and around other vessels. As mentioned previously, there has been a trend toward larger vessels since passage of the FCMA. Current loaded drafts for these vessels are 9 to 12 feet for the 50 to 70 footers and 12 to 15 feet for the 70 to 95 footers. With the depths on the western edge of the channel at 4.4 to 8.2 feet, the draggers can scrape and ground out even at high tide. Currently, 8 offshore draggers berth in this area. When the State completes its new heavy duty pier EE, 20 additional offshore vessels will berth at this location. Ten of these new berths will be occupied immediately as 10 offshore draggers are on the current berth waiting list. The remaining 10 berths will be used to accommodate fleet growth. The without-plan condition at the Western Bulkhead will be the implementation of the State of Rhode Island's plan, but not the Corps' plan. Since the State plans to dredge to -15' mhw in the area of new pier EE and sufficient water depths in the existing channel will allow vessels to reach the pier, the plan can go forward without the Corps' plan. The navigational difficulties of groundings and scrapings on the western edge of the channel and tidal delays will remain, however, and worsen due to the increase in vessel usage. Benefits to the Corps improvement plan are measured as the difference in the dollar value of damages and delays to 18 offshore draggers with and without the plan.

(1) Damages Prevented - The composition of the material in the channel is mostly sandy and, with the absence of rock and ledge, grounding and scraping damages are for the most part not the type that will be disabling and require a haulout to repair. Interviews with fishermen and marine repair personnel indicate that the damage is in the form of additional wear and tear. The propeller, rudder and shaft are affected, but the hull and through hull fittings for electronic gear are also subjected to accelerated wear. Information used in the estimation of benefits for this category was obtained from questionnaires completed by the Galilee Advisory Committee to the Rhode Island Dept. of Environmental Management, by an owner of a marine repair facility, from fishermen and Point Judith Coop personnel. According to these sources, annual repair and maintenance costs for an offshore dragger at Point Judith average \$56,100. Best estimates are that 5 to 10 percent of these costs are related to groundings. An average of 7.5 percent or \$4,210 is used for benefit estimation and its expected to be incurred annually without the project. With the improvement, groundings will be decreased by approximately 80% since it is impossible to eliminate all grounding damages due to conditions of weather, pilot error, traffic congestion, and mechanical failures.

Without Project:	18 vessels x \$4,210/year	= \$75,780
With Project:	18 vessels x \$4,210/year x 20%	= \$15,156
		\$60,624
	(rounded)	\$60,600

(2) Reduction in Delays - Tidal delays do occur in West Bulkhead area because of the following conditions: (i) the western edge of the East Branch channel recedes to between 4.4 and 8.2 feet, (ii) the size of vessels has grown and is straining the capacity of the 150' x 15' channel, and (iii) offloading congestion shrinks the usable width of the channel especially for fully loaded vessels. Vessel drafts are an important consideration in evaluating tidal delay and a profile of the Point Judith fleet drafts is as follows:

TABLE 11  
VESSEL DRAFTS - POINT JUDITH FLEET

<u>Type</u> <u>Vessel</u>	<u>Vessel</u> <u>Length</u>	<u>Vessel Draft (Range)</u>	
		<u>Unloaded</u>	<u>Loaded</u>
Inshore Lobster	20'-50'	3'	3.5'-5'
Inshore Trawler	40'-70'	6'-8'	8'-10'
Offshore Lobster	50'-80'	8'-10'	10'-12'
Offshore Trawler	50'-59'	7'-8'	9'-11'
	60'-69'	8'-10'	10'-12'
	70'-79'	10'-12'	12'-15'
	80'-89'	12	15
	90'-99'	12	15

The table indicates that only the offshore trawlers in the 70'-95' range should encounter tidal problems and only when fully loaded. The 18 offshore trawlers that constitute the without-project condition average 66 trips of 3 days duration per year. This and other pertinent cost information was obtained from a Vessel Financial Simulation for an offshore otter trawler out of Point Judith which was supplied by NMFS at Gloucester, Massachusetts.

The vessels would encounter the tidal delay only on inbound trips when fully loaded. On 50 percent of the trips, it is assumed that there would be no tidal delay as the vessels return to port would be coincident with high tide. The other 50 percent of the time they would encounter varying delays which would average 1.5 hours per trip. The improved channel with its extra 50 feet of width would eliminate the delay of having to wait for high tide to maneuver to the western channel edge to pass the docks and vessels waiting to offload. Fuel and labor savings from the elimination of the delay are estimated based on the following information. Fuel costs are obtained from the vessel simulation and approximately \$15.00 per hour for fuel and oil based on total fuel costs and total hours of operation. The savings are as follows:

Fuel: 33 trips x 1.5 hr. delay x \$15/hr. x 18 boats = \$13,400

Labor costs are also obtained from the simulation model by dividing the annual individual crew share by the total number of hours at sea. In 1988 prices, the labor cost is \$7.75 per hour.

Labor: 33 trips x 1.5 hr. delay x 5 crew x \$7.75/hr. x 18 boats = \$34,500  
Total (Fuel & Labor) = \$47,900

North Basin Area (Galilee) - The improvement to be undertaken by the State of Rhode Island, as previously mentioned, is to extend the existing steel bulkhead 1,000 feet eastward, extend pier SS, construct new piers TT and UU and dredge the pier areas to 8 feet mlw. The Corps' plan of improvement involves the dredging of a 150' wide by 10' deep channel extending eastward from the east branch channel into the North Basin improvement area. The new berths to be created at the extension of pier SS and at new piers TT and UU will accommodate inshore finfish vessels and inshore lobster boats. The capacity of these berths will be able to accommodate a total of 36 relocated inshore vessels (12 draggers and 24 lobster boats) from other piers within the port while also providing berths for 32 new inshore vessels. The State of Rhode Island manages the port by segregating vessel types. The relocating of the inshore boats to the North Basin from the West Bulkhead will allow all of the offshore vessels to be concentrated at that location. By segregation, the port is operated most efficiently with the correct vessels using the appropriate channels, congestion reduced and potential collision damage minimized. Of the 32 new berths created in the North Basin, local interests indicate that they expect 12 inshore draggers and 20 inshore lobster boats to occupy those berths.

The manner in which these berths will be filled is based on the following locally obtained information. A waiting list for berths at the port of Galilee does exist and roughly 20 boats (8 draggers and 12 finfish) will receive berths from this list. The remaining 12 berths will be used to accommodate future internal fleet growth within the port. The without-plan condition in the North Basin area involves the previously-mentioned construction, by the State of Rhode Island, of the bulkhead and docks TT and UU. The dock areas will be dredged to -8 feet MLW by the state. Conditions in the natural channel will remain unchanged. Although the channel has an average depth of seven feet there are numerous areas that five feet deep or less. Many of these shallow spots are located at the beginning of the North Basin area where many charter fishing and fishing party boats are berthed. With the addition of 36 relocated vessels to the North Basin from the West Bulkhead area and room for 32 more vessels to accommodate growth, the channel's existing inadequate depth and non-uniform width will cause delays and offer potential for grounding damage. The North Basin berths are being built to accommodate inshore lobster boats and draggers and a check of vessel drafts indicates that the lobster boats should encounter no significant navigational difficulties under the without-plan condition. This is not the case with the inshore draggers. With drafts of six to eight feet, these vessels will face tidal delays and be liable to damages from scraping their hulls



and grounding out. The Corps plan of improvement in the North Basin involves evaluating three channel plans of 8, 10, and 12 foot depths and 150 feet wide from the upper terminus of the West Branch Channel to the end of the new North Basin bulkhead near the bridge to Great Island. While the state will dredge to -8 feet MLW in the area of new docks TT and UU, the Corps improvement plan is to dredge the channel to the economically optimal depth which will allow for safe underkeel clearance based on squat, pitch and roll while the vessel is underway. Benefits projected to accrue to the Corps improvement plan are measured as the difference in the dollar value of delays and potential damages to 12 inshore draggers with and without implementation of the plan.

(1) Reduction in Delays - As mentioned the inshore draggers will encounter delays due to inadequate depth in the North Basin channel during certain periods of the tidal cycle. These vessels have drafts of six to eight feet unloaded and eight to ten feet loaded. They will very seldom be in the channel fully loaded as the offload facilities are in the West Bulkhead area. But most of the time they will be carrying a full load of fuel as they will refuel after offloading the catch in anticipation of the early departure for the next fishing trip. The average inshore dragger in the North Basin area will be operating with a seven foot draft. The shallow portions of the existing channel are -5 feet or less and the tidal range is three feet. On average a tidal delay of two hours will be encountered before sufficient depth is available in the channel to navigate around or over these shallow spots. It is projected that a delay will be encountered on only one-half of the average inshore draggers's 128 annual trips. The other 50 percent of the trips will encounter tidal stages close enough high tide to allow navigation in the channel. The benefits that will accrue to the Corps North Basin channel improvement plan are measured as savings in fuel and labor costs realized though the ability of inshore draggers to navigate in the channel at all tidal stages. The additional costs of operating during periods of tidal delay will be eliminated with the 10 and 12 foot plans and reduced with the eight foot deep channel plan. As was the case with the offshore vessels, fuel and labor costs are obtained from a vessel financial simulation, provided by NMFS, for a 54-foot long inshore dragger operating out of Point Judith. Fuel costs are approximately \$11.00 per hour based on total cost for fuel and oil and the total hours of operation. The savings (benefits) for the 10 and 12 foot depth plans are identical and estimated as follows:

Fuel: 64 trips X 2 hr. delay X \$11/hr. X 12 boats = \$16,900

Labor costs were obtained by dividing the annual individual crew share by the total number of hours at sea for an hourly cost of \$7.00/hour.

Labor: 64 trips X 2 hr. delay X \$7.00/hr. X 3 crew X 12 boats = \$32,300

Total Savings (Fuel & Labor) = \$49,200

(2) Damages Prevented - Under the without-plan condition the inshore draggers who will berth at the new North Basin docks will be susceptible to hull and running gear damage from inadequate channel depth and width. Since the composition of the channel is mostly sandy, grounding and scraping damages will not be the disabling type which require a haulout to repair. The damage will be in the form of additional wear and tear. Using the data from the completed questionnaires of knowledgeable local sources (cited in West Bulkhead analysis), annual repair and maintenance for a Point Judith inshore dragger averages \$29,400. Best estimates are that five to ten percent of these costs are related to groundings. An average of 7.5 percent or \$2,200 is used for benefit estimation and is expected to be incurred per vessel under the without-plan condition. With the improvement, additional wear and tear from groundings will be reduced by approximately 80 percent since it is impossible to eliminate all damages due to conditions of weather, pilot error, traffic and mechanical failures.

Without Project:	12 vessels X \$2,200/year	= \$26,400
With Project:	12 vessels X \$2,200/year X 20%	= 5,300
	Total Damage Reduction	= \$21,100

The eight foot deep channel will reduce but not eliminate tidal delays based on safe underkeel clearance of 2 to 2-1/2 feet for the type of vessel in this location. Of the 64 trips on which delays will be encountered without the project, 32 will remain with the eight foot deep plan. However, the delay will be reduced from two to one hour. Benefits are estimated below:

Fuel: 32 trips X 1 hr. delay X \$11/hr X 12 boats = \$4,200  
 Labor: 32 trips X 1 hr delay X \$7/hr X 3 crew X 12 boats = \$8,100

Total Savings (Fuel & Labor) = \$12,300

Damages Prevented - The eight foot deep channel will provide only one foot underkeel clearance at MLW as opposed to the three feet provided by the ten foot channel and the five feet by the 12 foot channel. The without-project damages of \$2,200 will be reduced to \$1,100, but as mentioned only 80% will be eliminated.

Without Project:	12 vessels X \$2,200/year	= \$26,400
With Project:	12 vessels X \$1,100/year	= \$13,200
	Benefits (80%) X	13,200 = \$10,600

Jerusalem - The plans of the State of Rhode Island for future expansion of the port of Point Judith call for complete utilization of all potential berthing sites on the Galilee side of Point Judith Pond prior to constructing berthing space on the Jerusalem side. The current state projects at the West Bulkhead and North Basin will completely exhaust potential berthing sites at Galilee. In order to provide a continuity for the fostering of commercial fisheries development, the State has made long range plans to construct 2 heavy piers at Jerusalem, north of the marine

experiment station. These piers will be for berthing only and each will accommodate 10-12 offshore draggers for a total of 20-24. This plan for Jerusalem is based on the historical trend of growth of these vessels, the nearby productive fishing grounds and the success of the Coop and other Point Judith marketers. As mentioned, this is a future plan and with the North Basin and West Bulkhead projects providing berthing capacity for growth at Galilee, any dock construction is at least ten years away at Jerusalem. Benefits were not estimated for state development of additional berthing space at Jerusalem for the following reasons: (i) no specifically stated plan of the State of Rhode Island has been put forth for which benefits, in conjunction with a Corps channel improvement plan, could be evaluated, (ii) benefits for transfer vessels from Galilee would be minimal, and (iii) benefits for additional landings of fish by new offshore vessels will not be supported by the National Marine Fisheries Service. This is based on the current fisheries management plans of the New England Fisheries Management Council and the philosophy at NMFS of resources sustainability through management and not encouraging increases in fishing effort. Even if the benefits claimed were for underutilized species only (e.g. squid and whiting) it cannot be reasonably assumed that these species would still be underutilized ten years from now.

Snug Harbor - As mentioned previously in the section on the existing condition, the channel that runs from the State dock at Jerusalem up to High Point at Snug Harbor has authorized dimensions of 6 feet deep and 100 feet wide. There are varying depths in this channel above and below 6 feet and a shoal area of less than 5 feet. The depth at the two marine repair facilities at Snug Harbor is 12 feet. All of the inshore lobster boats can reach the repair facilities. The inshore trawlers can also reach the facilities, but only with the tide and, therefore, face risk and delays. A small number of offshore lobster vessels and offshore draggers also need the tide to reach the facilities. The majority of the offshore fleet can't reach Snug Harbor due to their deep drafts and inadequate channel depths. They are forced to other ports such as Newport or New York for annual maintenance and unscheduled repairs. The Corps' plans of improvement involve the evaluation of two different channel sizes leading to Snug Harbor; one 15 feet deep by 150 feet wide and the other 12 feet deep by 100 feet wide. This would enable passage of the entire Point Judith fleet at all tidal stages. The economic benefit to this improvement is comprised of two components; those vessels that can navigate to Snug Harbor but only with the tide and with risk and those vessels that can't navigate to Snug Harbor because of vessel draft in excess of channel depth, even at high tide, and must be repaired at other ports. Benefits are estimated as follows for the 15' x 150' channel.

Inshore and Offshore Vessels - Elimination of Delays - A check of vessel drafts indicates that a total of 20 vessels can navigate to Snug Harbor, but only with the tide. They, therefore, face a tidal delay. This delay will be eliminated with the project. These 20 vessels are 14 inshore draggers, 4 offshore draggers, and 2 offshore lobster boats. The benefit is quantified based on operating costs eliminated, i.e. fuel and oil and 2 crew.

<u>Vessels</u>	x	<u>Repairs</u>	x	<u>Delay</u>	x	<u>Operating Costs</u>	=	<u>Benefit</u>
20		2		3 hrs		\$22/hr	=	\$2,600

Offshore Vessels - Elimination of Additional Travel - Offshore vessels currently unable to utilize the Snug Harbor repair facilities usually travel to Newport, Rhode Island twice a year for annual major maintenance and repair and unexpected repairs. The cost of this 4 hour round trip twice annually will be eliminated with the project. As above, the benefit is based on operating costs of fuel and oil and 2 crew. A check of vessels drafts indicates that 68 offshore draggers and 13 offshore lobster boats will benefit.

<u>Vessels</u>	x	<u>Trips</u>	x	<u>Hours</u>	x	<u>Operating Costs</u>	=	<u>Benefit</u>
81		2		4 hrs		\$31/hr	=	\$20,100

Benefits which will accrue to the 12 feet deep by 100 feet wide channel plan are estimated in the same manner as above.

Inshore and Offshore Vessels - Elimination of Delays - The 20 vessels that currently navigate to Snug Harbor, only with the tide, will have the tidal delay eliminated completely with the 12 foot deep channel. Benefits are therefore identical to the 15 foot deep channel plan and amount to \$2,600 annually.

Offshore Vessels - Elimination of Additional Travel - With the 12 foot deep channel, the 13 offshore lobster vessels will be able to navigate to Snug Harbor. In addition, 51 of the offshore draggers will also eliminate the cost of twice yearly repair trips to Newport. Benefits total \$15,900 annually.

<u>Vessels</u>	x	<u>Trips</u>	x	<u>Hours</u>	x	<u>Operating Costs</u>	=	<u>Benefit</u>
64		2		4		\$31/hr	=	\$15,900

#### Summary of Economic Analysis

The total value of dollar benefits which accrue to the Corps of Engineers improvements are identified by segment and displayed below.

<u>Segment</u>	<u>Benefit</u>
<u>West Bulkhead (Galilee)</u>	
Damages Prevented	\$60,600
Reduction in Delays	\$47,900
Total	\$108,500

North Basin Area (Galilee)Benefit by Channel Depth

	<u>8 Feet</u>	<u>10 Feet</u>	<u>12 Feet</u>
Damages Prevented	\$10,600	\$21,100	\$21,100
Reduction in Delays	12,300	49,200	49,200
Total	\$22,900	\$70,300	\$70,300

Snug HarborBenefit by Channel Depth

	<u>12 Feet</u>	<u>15 Feet</u>
Elimination of Delays	\$2,600	\$2,600
Elimination of Additional Travel Costs	\$15,900	20,100
TOTAL	\$18,500	\$22,700

Incremental Economic Justification

Since the individual improvement plans for the channels at the West Bulkhead, North Basin and Snug Harbor are independent and separable each plan must be incrementally justified. The benefits which accrue to each improvement plan must exceed the costs to implement that plan. The table below displays the costs, benefits and status of justification for the three plans.

Table 12  
Incremental Economic Justification  
Point Judith, R.I. Improvement Plans

West Bulkhead

Annual Benefits	\$108,500
Annual Cost	\$ 19,800
Benefit/Cost Ratio	5.5
Net Benefits	\$ 88,700

North Basin AreaChannel Depth

	<u>8 Feet</u>	<u>10 Feet</u>	<u>12 Feet</u>
Annual Benefits	\$22,900	\$70,300	\$70,300
Annual Costs	\$21,000	\$25,900	\$29,800
Benefit/Cost Ratio	1.09	2.7	2.4
Net Benefits	\$ 1,900	\$44,400	\$40,500

Snug Harbor

	<u>Channel Depth</u>	
	<u>12 Feet</u>	<u>15 Feet</u>
Annual Benefits	\$18,500	\$22,700
Annual Cost	\$69,700	\$155,000
Benefit/Cost Ratio	0.3	0.2
Net Benefits	\$ 0	\$ 0

It is concluded, based on the information above, that the West Bulkhead and North Basin plans are economically justified while the Snug Harbor improvement plan is not.

**APPENDIX 4**

**PERTINENT CORRESPONDENCE**

APPENDIX 4  
PERTINENT CORRESPONDENCE  
TABLE OF CONTENTS

ITEM

LIST OF STUDY COORDINATION MEETINGS

SECTION A

COPIES OF CORRESPONDENCE RECEIVED DURING REVIEW OF DRAFT REPORT

SUMMARY OF RESPONSES TO DRAFT REVIEW COMMENTS

U.S. Fish and Wildlife Service - August 9, 1989.

Rhode Island Department of Administration - Division of Planning -  
July 20, 1989.

Rhode Island Department of Environmental Management - Office of the  
Director - July 14, 1989.

U.S. Department of Transportation - United States Coast Guard -  
July 14, 1989.

Rhode Island Department of Environmental Management - Office of  
Environmental Coordination - July 13, 1989.

Town of Narragansett - Town Council - July 6, 1989.

Rhode Island Historical Preservation Commission - June 27, 1989.

SECTION B

COPIES OF CORRESPONDENCE RECEIVED BEFORE REVIEW OF DRAFT REPORT

Rhode Island Department of Environmental Management - Office of the  
Director - March 9, 1989.

New England Division - February 24, 1989.

New England Division - July 7, 1987.

New England Division - January 13, 1987.

U.S. Fish and Wildlife Service - Ecological Services Branch -  
August 27, 1986.

Rhode Island Historical Preservation Commission - August 13, 1986.

New England Division - August 6, 1986.

New England Division - July 11, 1986.

Rhode Island Department of Administration - Statewide Planning Program -  
June 5, 1986.

New England Division - June 5, 1986.

Rhode Island Department of Environmental Management - Office of  
Environmental Coordination - May 14, 1986.

National Marine Fisheries Service - Habitat Conservation Branch -  
May 7, 1986.

U.S. Fish and Wildlife Service - Ecological Services Branch -  
May 7, 1986.

Rhode Island Department of Administration - Statewide Planning Program -  
April 22, 1986.

National Marine Fisheries Service - Habitat Conservation Branch -  
March 17, 1986.

Rhode Island Department of Environmental Management - Office of the  
Director - May 17, 1985.



New England Division - March 11, 1985.  
New England Division - March 11, 1985.  
Rhode Island Department of Environmental Management - Division of  
Planning and Development - November 23, 1984.  
Town of South Kingstown - Town Manager - March 6, 1984.  
Town of South Kingstown - Town Council - February 27, 1984.  
Town of Narragansett - Town Council - June 21, 1983.  
New England Division - June 9, 1983.  
Rhode Island Department of Environmental Management - Office of the  
Director - May 12, 1983.

LIST OF STUDY COORDINATION MEETINGS

- May 18, 1988 - New England Division meeting with Rhode Island Coastal Zone Management to initiate coordination:
- May 1, 1987 - New England Division meeting with Rhode Island Department of Environmental Management Division of Coastal Resources to discuss suitable disposal sites for the project.
- September 12, 1986 - New England Division meeting with Rhode Island Coastal Resources Management Council to obtain environmental and economic data.
- July 29, 1986 - New England Division biological sampling and coordination with Rhode Island Department of Environmental Management.
- June 23, 1986 - New England Division meeting with National Marine Fisheries Service to discuss commercial fishing benefits.
- April 25, 1984 - Initial meeting between New England Division and local authorities to obtain information relative to existing conditions and desired improvements within Point Judith Pond.

**APPENDIX 4**

**SECTION A**

**COPIES OF CORRESPONDENCE  
RECEIVED DURING REVIEW  
OF DRAFT DETAILED PROJECT REPORT**

## SUMMARY OF RESPONSES TO DRAFT REVIEW COMMENTS

### Responses to Rhode Island DEM Comments (July 14, 1989):

1. Reference to State construction work at the Port of Galilee has been updated.
2. Statements on dredging window (page 19) has been corrected (see 3 below)
3. The DEM recommendations restricting dredging to the periods between April 1 through May 30 and August 30 through November 15 can be accommodated. The appropriate changes have been made to the text of the report, the Environmental Assessment and 404 (b) 1 Evaluation.
4. Paragraph describing saltmarsh vegetation (page EA-15) has been rewritten.
5. The disposal site is located adjacent to the Galilee Bird Sanctuary. The correction has been made.
6. Information on the elutriate test procedures will be supplied to the state.
7. Reference to criteria for ortho-phosphate was a typo. Correction has been made.
8. We believe that monitoring of the effluent is not necessary. Copper levels in the sediments are low. Oxidation of reduced copper sulfides typically results in release of soluble copper during elutriate testing. The levels in the elutriate although above the EPA criteria are relatively low. EPA criteria were established for continuous discharges. Given the short-term duration of the release impacts are likely to be minor. Filter mechanisms will be used to remove particulate material from leaving the containment site. Although dissolved copper could potentially pass through the filtration system and enter the adjacent Phragmites marsh, copper would readily sorb to soil particles in the immediate vicinity of the effluent. This would significantly reduce the potential for biological uptake. Under a worst-case analysis there could be some accumulation of copper in Phragmites. The likelihood of significant bioaccumulation, biomagnification up the food chain, or any associated biological impacts are so low as to be insignificant.
9. PCB levels in the sediment were low (<60 ppb). As discussed in the EA it is believed that the initial PCB elutriate tests were in error (both ambient water and elutriate levels were high). Subsequent elutriate tests in the vicinity showed no sign of release. There is no history of PCB contamination in the area and we do not believe that the PCB levels at Point Judith pose a significant health concern.

Responses to U.S. Coast Guard Comments (July 14, 1989):

The U.S. Coast Guard will provide the necessary navigation aids for the project. The difference between the engineering estimate and the actual cost of installation indicated by the Coast Guard does not significantly change the total project cost. Also, since this part of the project estimate is 100% Federally funded, and has no bearing on the cost sharing percentages, the difference has not been incorporated into the report.

Responses to Fish and Wildlife Comments (August 9, 1989):

**Dredging Concerns**

Dredging window has been modified to avoid critical times of the year. The DEM recommendations restricting dredging to the periods between April 1 through May 30 and August 30 through November 15 will be accommodated. The appropriate changes have been made to the text of the report, the Environmental Assessment and 404 (b) 1 Evaluation.

A hydraulic dredge will be used to reduce resuspension.

A coordinated site visit will be undertaken to monitor the dredging inputs and the extent of the plume. Based on the test results in the EA we do not believe that chemical monitoring at the dredging site is necessary.

**Disposal Concerns**

The Corps recognizes that there are a number of issues surrounding the use of the upland dewatering site. The site is currently filled and the material must be removed before dredging begins. Design criteria and operation of the site need to be established to insure containment of suspended solids and any potential release of dissolved contaminants. The ultimate disposal site for material needs to be determined. The disposal site is the responsibility of the local sponsor (RIDEM). The local sponsor has assured the Corps that the site has the necessary capacity and will be available for use in the project. At a minimum the upland dewatering site will be designed to meet the specifications in the State of Rhode Island Coastal Resources Management Program. The Corps may require more rigorous design standards. Controls on the operation of the dewatering site will be imposed in order to prevent failure or overtopping of the dike structure. Our analysis of chemical data indicates that chemical testing of the effluent is not warranted (see responses to RIDEM).



## United States Department of the Interior

FISH AND WILDLIFE SERVICE  
400 RALPH PILL MARKETPLACE  
22 BRIDGE STREET  
CONCORD, NEW HAMPSHIRE 03301-4901

Joseph Ignazio  
Chief, Planning Division  
New England Division  
Army Corps of Engineers  
424 Trapelo Road  
Waltham, Massachusetts 02254

August 9, 1989

Dear Mr. Ignazio:

This is in response to your letter of June 29, 1989, requesting our views on the draft Detailed Project Report for the Navigation Improvement Project at Point Judith Pond, Narragansett, Rhode Island. The following comments and recommendations constitute our final report on the project pursuant to Section 2(b) of the Fish and Wildlife Coordination Act, 16 U.S.C. 661 et seq.

Fish and wildlife resources of the project area and concerns regarding project impacts were described in our August 27, 1986, letter to the Planning Division. Among the important marine fish species of the area are: winter flounder, tautog, white perch, bluefish, menhaden, and striped bass. Important shellfish resources include soft shelled clams, quahogs, and scallops. There are ecologically important eelgrass beds adjacent to the channel improvement area, but not within the proposed dredge limits. Migratory waterfowl, including red-breasted merganser, bufflehead, white-winged scoter and others, occur in the project vicinity.

Our letter of May 7, 1986, indicated that the federally listed threatened piping plover is known to nest at one of the originally proposed dredge disposal sites, East Matunuck State Beach in South Kingston. This site is no longer proposed for dredge disposal since the Jerusalem channel, "Plan C", has been dropped from the project. The material from the Galilee dredge site is unsuitable for beach disposal and an upland containment site has been proposed. Given the selection of an upland disposal site, the project should not adversely affect the piping plover. No biological assessment or further consultation with this office is required. This determination may be reconsidered if the project is modified or if new information becomes available.

Potential impacts of the project are described in the Environmental Assessment (EA). There are two aspects of the project for which additional mitigation planning is needed. These are dredging-related turbidity/sedimentation and dredged material disposal. Of particular concern is the potential for turbidity and sedimentation impacts to shellfish beds east of the Great Island Bridge, eelgrass beds adjacent to the navigation channel, and winter flounder throughout the project vicinity. Proposed mitigation measures include: 1) scheduling dredging to avoid critical times of the year; 2) use of a hydraulic dredge to reduce sediment resuspension; and 3) monitoring to insure resources are not impacted by dredging.

### Dredging Impacts

There is a discrepancy between the project construction timing proposed in the Detailed Project Report (DPR) and that described under mitigation in the EA. On page 19 of the DPR, the construction period is given as June to September, while on page EA-27, the work window is described as October to January. Neither of these construction windows coincides completely with the most recent recommendations of the Rhode Island Department of Environmental Management (DEM). In their July 14, 1989, review of the project, the DEM recommended two windows during which dredging should occur: April 1 to May 30 and August 30 to November 15. These work windows are designed to prevent dredging during the critical winter flounder migration and spawning period, and the summer shellfish spawning period. We recommend that dredging occur during the time periods specified by the DEM.

We concur that sediment resuspension would be minimized by using a hydraulic dredge. In the EA, it is reported that the area of greatest turbidity impacts from dredging is typically within 300 meters of the activity. In the Corps' Technical Report HL-89-9, Field Studies of Sediment Resuspension Characteristics of Selected Dredges, turbidity plumes from hydraulic dredges of up to 1800 meters are reported. Thus, it is likely that adjacent eelgrass and shellfish beds are within the dredging impact zone. The need for sediment monitoring during dredging operations is noted in the EA (p. EA-18,20,22), however, no definitive monitoring program or contingency plans are proposed. Before dredging is begun, we recommend that monitoring stations be established in critical resource areas (e.g. Bluff Hill Cove shellfish areas, eelgrass beds, etc.) to evaluate water chemistry, suspended sediment levels and/or sediment deposition rates during dredging. A sampling schedule and sediment threshold levels should be established in coordination with this office and other federal and state resource agencies. Contingency plans should be an integral part of the monitoring effort in the event that thresholds are exceeded. One possible contingency/mitigation measure would be to restrict dredging during certain tidal conditions to prevent sediment transport into sensitive areas.

### Disposal Impacts

Two issues associated with dredge material disposal that should be addressed in the final DPR are: disposal of material after it is dewatered, both from previous and proposed dredging; and proper handling of material at the dewatering site to prevent sediment and contaminant releases. Care in the handling and subsequent disposal of dredge material is important since the site is surrounded by wetlands. The value of these wetlands will likely increase in the future as efforts are currently underway through the North American Waterfowl Management Plan to enhance saltmarsh habitat values adjacent to the dewatering site in the Galilee Wildlife Sanctuary.

The proposed dewatering site presently contains material from previous dredging that must be removed before the site can be used for this project. The Corps does not consider removal of this material to be a project cost, however, it should be considered in the environmental analysis since the viability of the project is dependent on the availability of the dewatering site. We recommend that the final DPR address the issue of dredge material disposal after dewatering, including contaminant considerations and the availability of suitable upland disposal options.

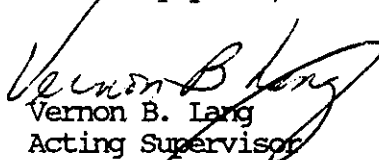
Overtopping of the containment dike is of concern since the volume of sediment slurry from the proposed dredging is approximately four times greater than the capacity of the disposal area (i.e. 100,000 cubic yards vs. 26,000 cubic yards). We understand there have been containment problems at the site during previous disposal operations that resulted in sediment deposition on adjacent wetlands. We recommend that the cause of these previous containment failures be investigated and appropriate measures taken to prevent overtopping or dike failure during disposal for the navigation improvement project.

Filtering devices are proposed for the dewatering pond outlet to prevent sediment transport into adjacent wetlands. Depending on the amount of settling that occurs in the detention area, filters may become rapidly clogged and lead to outlet overtopping or failure. Strict provisions for filter maintenance should be included in the project specifications. Sediment loading of filtering devices should be minimized by allowing adequate detention time for settling within the dewatering pond. It may be appropriate to specify wetland restoration criteria in the dredging contract. Requiring the contractor to post a bond for wetland restoration would provide an economic incentive for proper management of disposal activities.

A final dredge disposal consideration is related to chemical contamination of dredge effluent. The results of elutriate tests on the dredge material show that copper and PCB levels were up to 3.6 and 19 times higher than EPA water quality criteria, respectively. We concur with the DEM's recommendation that dredging and dewatering operations should be closely monitored to determine if water quality violations occur and that any observed impacts should be mitigated.

We appreciate the opportunity to review and comment on the draft Detailed Project Report. Please contact Mike Tehan of my staff if we can be of further assistance.

Sincerely yours,

  
Vernon B. Lang  
Acting Supervisor  
New England Area





STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Administration  
DIVISION OF PLANNING  
265 Melrose Street  
Providence, Rhode Island 02907

July 20, 1989

Mr. Christopher Hatfield  
Department of the Army  
Corps of Engineers, NED  
424 Trapelo Road  
Waltham, MA 02254-9149

Dear Mr. Hatfield:

On June 15, 1989 this office received a copy of the Navigation Improvement Study, Detailed Project Report and Environmental Assessment regarding Point Judith Pond, Port of Galilee, Narragansett, RI. This project was referred to five agencies for review and comment. The project was assigned the State Application Identifier EAS-89-03.

This is to advise that as the State Single Point of Contact, acting under the provisions of Presidential Executive Order 12372, we have received several significant comments from the Rhode Island Department of Environmental Management. A copy of their comments is attached. An additional copy was also sent to Colonel Daniel Wilson by the DEM.

The Army Corps of Engineers should contact and work with the Department of Environmental Management on solving some of the problems raised in their comments.

This office thanks you for the opportunity to review and comment on this proposal.

Very truly yours,

Patrick J. Fingliss, Chief

PJF:eb



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Environmental Management  
OFFICE OF THE DIRECTOR  
9 Hayes Street  
Providence, R.I. 02908

July 14, 1989

Colonel Daniel M. Wilson, Division Engineer  
Planning Division  
Coastal Development Section  
New England Division, Corps of Engineers  
424 Trapelo Road  
Waltham, MA 02254

Dear Colonel Wilson:

Thank you for the opportunity to review the draft Detailed Project Report on your navigation study for the Port of Galilee, with the Environmental Assessment, Section 404(b)(1) Evaluation and Finding of No Significant Impact. The Rhode Island Department of Environmental Management recognizes the need for the proposed dredging to assure continued efficient operation of the port. We concur with the Corps of Engineers' choice of combined plans A and B, consisting of widening the existing channel from 150 to 200 feet and extending this channel into the north basin, as the preferred alternative. In DEM's opinion, the proposed project will have no significant impact provided that the environmental safeguards described in the subject document and recommended herein are applied and provided that appropriate interim and final disposal sites for the dredged material are available.

The following are specific comments on the subject document.

- (1) Page 6, Section 2.2 Conditions If No Federal Action Is Taken

This section and several other sections of the document describe ongoing state construction work at the Port of Galilee, including bulkhead and pier improvements. At present all state work has been completed and no further construction is contemplated in the near future.

(2) Page 19, Section 5.1, Dredging Impacts

The statement "Restricting construction to June through September would minimize impacts to fish and shellfish spawning" is contradictory to item No. 4 on page E A - 23, which reads "The shellfish populations are most susceptible to dredging impacts during summer months, as this is a period of spawning and recruitment. To avoid these impacts, a dredging window restricting operations in summer months (June to September) will be imposed (see mitigation)". Page E A - 27, paragraph 1, line 3, 4 and 5 reads "Restricting dredging operations in summer months will minimize impacts of the project on the shellfish resources. Therefore no dredging shall take place between June and September." Paragraph 2 continues "Dredging operations will be scheduled to take place within the October to January dredging window." The statement on page 19 is apparently an error and should be corrected.

(3) DEM recommends the following dredging windows, eg., time periods when dredging is permitted: April 1 through May 30 and August 30 through November 15. No dredging should be permitted at any other time.

(4) Page E A - 15, last paragraph, is confusing and should be reworked. The areas south of the Galilee Escape Road within the area influenced by the culverts support salt marsh vegetation similar to that north of the Galilee Escape Road. The rest of the area south of the Galilee Escape Road is dominated by Phragmites australis and shrubs.

(5) Page E A - 16, 2., Disposal Sites, Line 1. The upland containment area is located adjacent to the Galilee Bird Sanctuary, not within it.

(6) Page E A - 21. Further information on the elutriate test should be provided.

(7) Page E A - 21, Table 6. Verification of the source of the EPA Water Quality Criteria for ortho phosphorus is requested. In EPA's Quality Criteria for Water, 1986 ("The gold book"), a standard of 0.10gm/c. total P was the only figure found.

(8) Page E A - 21, Table 6, Page E A - 32. Violations of the Cu criteria during dredging operation may occur based on the dredge sample analyses. Dredging and dewatering operations must be closely monitored to determine if criteria violations occur and to minimize and mitigate any adverse effects.

(9) Page E A - 22, Page E A - 9. The detection limit for PCBs on Page E A - 9 is <60 ppb for bulk sediment analysis and 0.02 ppb for the elutriate test. The elutriate test results warrant concern as does the lack of a PCB standard for disposal of the

sediment (i.e. dredge spoil). The disposal issue should be approached with caution because of potential health concerns.

Looking to the future, when application is made to the state for Coastal Resources Management Council and Department of Environmental Management permits for this project, some currently unresolved issues will need to be clarified.

In order for the dredged material from the subject work to be dewatered in the upland containment area adjacent to the Galilee Bird Sanctuary, a significant quantity of dredged material already contained in this area must be removed. Suitable disposal sites for this preexisting material must be found.

Before approval for dewatering of the dredged material from the subject project can be granted further information on the quality of the spoil may be required. For example, it will be necessary to know the proportion of Class I vs. Class II sediments and further testing for PCBs may be required. An Order of Approval must be secured from the Division of Water Resources, DEM, for any discharges into surface water from the dewatering operation.

In addition, the final disposal site for the dredged material, or alternate suitable sites, must be determined by the state in accordance with any and all state and federal regulations and must be approved by the appropriate agencies prior to initiation of dredging operations.

The Rhode Island Department of Environmental Management appreciates the opportunity to comment at this juncture and looks forward to working with the Corps of Engineers as the local project sponsor.

Sincerely,

A handwritten signature in cursive script, appearing to read "Robert L. Bendick".

Robert L. Bendick, Director  
Department of Environmental Management

U.S. Department  
of Transportation

United States  
Coast Guard



Commander  
First Coast Guard District

Capt. John Foster Williams BCG  
408 Atlantic Avenue  
Boston, MA 02210-2209  
Staff Symbol:  
Phone: (oan)

(617) 223-8338

16000

14 JUL 1989

Colonel Daniel M. Wilson  
Division Engineer  
New England Division  
U.S. Army Corps of Engineers  
424 Trapelo Road  
Waltham, MA 02254-9149

Dear Colonel Wilson:

This is in response to your letter of 13 June 1989 concerning the navigation project at Point Judith Pond, Narragansett, Rhode Island. This project should certainly enable the commercial fleet to expand in Point Judith.

Appendix 2, page 20, of the Detailed Project Report and Environmental Assessment recommends that two buoys be added to this waterway after dredging is completed. After evaluation of your project, I feel three buoys would provide a safer waterway as illustrated in enclosure (1). These buoys would mark the turns and terminus of the channel and warn mariners of the shallow waters and shoals to the north and west.

Appendix 2, page 23, of the Project Report, shows an annual estimated charge for navigation aids to be \$500. The buoys planned for installation are a 3CR type. The cost for installing each aid is \$3,000 which would total \$9,000.

If you have any further questions in this matter please feel free to contact Chief of Aids to Navigation Branch, Commander Norman C. Edwards, Jr., or me at the above telephone number.

R. I. RYBACKI  
REAR ADMIRAL, U.S. COAST GUARD  
COMMANDER, FIRST COAST GUARD DISTRICT

Encl: (1) Chartlet of Point Judith Pond



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Environmental Management  
OFFICE OF ENVIRONMENTAL COORDINATION  
83 Park Street  
Providence, RI 02903-1037  
(401) 277-3434

CERTIFIED MAIL

July 13, 1989

Colonel Daniel M. Wilson  
Division Engineer  
Planning Division/Coastal  
Development Section  
N. E. Division, Corps of Engineers  
424 Trapelo Road  
Waltham, MA 02254

Dear Colonel Wilson:

Thank you for your letter to Robert L. Bendick, Director, R. I. Department of Environmental Management, dated June 13, 1989 inviting comments on the Port of Galilee draft Detailed Project Report including an Environmental Assessment, section 404 (b)(1) Evaluation and a finding of No Significant Impact. This project is of considerable importance to the State of Rhode Island and we appreciate the opportunity for input at this point.

The purpose of this letter is to inform you of the Department's intent to comment. My office has received numerous carefully considered comments from various divisions within the Department of Environmental Management. We request an extension of the comment period for one week to allow time to integrate these comments in a single departmental response. The Department of Environmental Management's comments will be forwarded to you no later than July 21, 1989.

Thank you for your consideration in this matter.

Sincerely,

Victor A. Bell  
Chief

VAB/elm  
cc: Robert Bendick



## TOWN OF NARRAGANSETT

Town Hall, 25 Fifth Avenue, Narragansett, R.I. 02882-0777 • Tel. 789-1044

### NARRAGANSETT TOWN COUNCIL

Timothy P. Haxton, President  
Anne E. N. Hoxsie, Pres. Pro Tem  
Thomas P. Cronin  
Amelia F. Crook  
David E. Ousterhout

July 6, 1989

DEPARTMENT OF THE ARMY  
Daniel M. Wilson  
Colonel, Corps of Engineers  
Division Engineer  
424 Trapelo Road  
Waltham, MA 02254

Dear Colonel Wilson:

At the July 5, 1989 Town Council Meeting, it was

VOTED: That the communication from the Army Corps of Engineers, regarding a draft copy for review and comment of Section 107 Navigation Detailed Project Report for navigation improvements at the Port of Galilee in Point Judith Pond be received and filed.

Sincerely,

MARY M. BECK  
Council Clerk

MMB/emf  
400-L-89-0194



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

HISTORICAL PRESERVATION COMMISSION

Old State House  
150 Benefit Street  
Providence, R.I. 02903  
(401) 277-2678

27 June 1989

Colonel Daniel M. Wilson  
Division Engineer  
New England Division  
U. S. Army Corps of Engineers  
4 Trapelo Road  
Waltham, Ma. 02254-9149

Re: Draft Navigation Improvement  
Study, Point Judith Road

Dear Colonel Wilson:

The Rhode Island Historical Preservation Commission has reviewed the above-referenced document, and we are in concurrence with your finding that the project will not affect any significant properties listed on or eligible for listing on the National Register of Historic Places.

These comments are provided in accordance with Section 106 of the National Historic Preservation Act.

Thank you for the opportunity to comment. If you have any questions, contact Richard Greenwood, Project Review Coordinator of this office.

Very truly yours,

Edward F. Sanderson  
Executive Director  
Deputy State Historic  
Preservation Officer

EFS:et



**APPENDIX 4**

**SECTION B**

**COPIES OF CORRESPONDENCE  
RECEIVED BEFORE REVIEW  
OF DRAFT DETAILED PROJECT REPORT**



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Environmental Management  
OFFICE OF THE DIRECTOR  
9 Hayes Street  
Providence, R.I. 02908

March 9, 1989

Mr. Joseph L. Ignazzio, Chief  
Planning Division  
Impact Analysis Branch  
New England Division  
Corps of Engineers  
424 Trapelo Road  
Waltham, MA 02254

RE: Point Judith Pond - Port of Galilee Navigation  
Improvement Project.

Dear Mr. Ignazzio:

In response to your letter of February 3, 1989 please be advised the Department of Environmental Management intends to be the local sponsor for the above cited project.

It is my understanding the overall cost of this project will be \$245,000 and local sponsor's share is twenty percent of the overall cost amounting to \$49,000.

The total funding for the local share will be provided from the "Galilee Development Fund" a restricted receipt account which can be used for development projects at the Port of Galilee. The fund presently has a balance of in excess of \$300,000 and receives funding in excess of \$120,000 per year.

I hope this letter will suffice for the Department's commitment to the project and that you and your staff can move forward in finalizing the Detailed Project Report as quickly as possible.

Should you have any questions on the funding source of this project, or need additional information, please contact Mr. James T. Beattie, Chief of the Coastal Resources Division at (401) 277-3429.

Sincerely,

Robert L. Bendick, Jr.  
Director

RLB:gjf

cc: F. Geremia  
J. Beattie



DEPARTMENT OF THE ARMY  
NEW ENGLAND DIVISION, CORPS OF ENGINEERS  
424 TRAPELO ROAD  
WALTHAM, MASSACHUSETTS 02254

REPLY TO  
ATTENTION OF

February 24, 1989

Planning Division  
Impact Analysis Branch

Mr. Robert L. Bendick  
Department of Environmental Management  
Office of the Director  
9 Hayes Street  
Providence, Rhode Island 02903

Dear Mr. Bendick:

Projects cost-shared by the United States Army Corps of Engineers require a financial analysis of the non-Federal sponsor. For most continuing authority studies, such as Point Judith Pond, Narragansett, Rhode Island, navigation improvement study, the required financial analysis may be provided in the form of a letter from the local sponsor to be included in the detailed project report (DPR).

We understand that your office will act as the local sponsor for this project. We request therefore that you submit a letter containing the following items:

- (1) statement containing the State of Rhode Island's cost shared amount of the project cost
- (2) statement showing the source of both upfront and financed funding - appropriations, excise taxes, etc.
- (3) statement providing the State's bond rating applicable if general obligation bonds are identified as a source of funds
- (4) signature of appropriately empowered official

The total first cost for the improvement plan at Point Judith is estimated to be \$245,000. The local cost share is 20%, or \$49,000, with 10% or \$24,500, to be provided up front, and the remainder to be financed for up to 30 years.

Should you have any questions on the preparation of this letter, please contact Mr. Richard Ring, of my staff, at (617)647-8643.

cc:

Mr. Smith - C/CDS  
Mr. Hatfield - CDS  
Mr. Ring  
Mr. Pronovost  
Mr. Rubin  
IAB File  
Plng. Div. Files  
Reading Files

Sincerely,

Joseph L. Ignazio  
Chief, Planning Division



DEPARTMENT OF THE ARMY  
NEW ENGLAND DIVISION, CORPS OF ENGINEERS  
424 TRAPELO ROAD  
WALTHAM, MASSACHUSETTS 02254-9149

REPLY TO  
ATTENTION OF

July 7, 1987

Planning Division File  
Impact Analysis Branch

Mr. Richard Greenwood  
Rhode Island Preservation Commission  
150 Benefit Street  
Providence, R.I. 02903

Dear Mr. Greenwood:

In 1986, the Army Corps of Engineers was evaluating a proposed navigation project at Point Judith, Rhode Island. This project was reviewed by your office, and a letter dated August 13, 1986 verified that the Historical Preservation Commission had no objections to the undertaking.

The navigation project has now been reduced in scope (see enclosed map) and will involve only widening and extending the West Bulkhead channel (outlined in red). The existing channel will be widened from 150 to 200 feet, and will be extended into the north basin at a depth of 10 feet and width of 150 feet. The dredged material will be placed in a previously used, state designated area.

We feel that this project will have no effect upon any structure or site of historic, architectural, or archaeological significance as defined by the National Historic Preservation Act of 1966. We would appreciate your concurrence in this matter.

If you have any questions concerning this project, feel free to contact Kate Atwood at (617)-647-8140.

Sincerely,

JOSEPH L. IGNAZIO  
Chief, Planning Division

Enclosure  
cc:  
Ms. Atwood  
Ms. Bourassa  
Mr. Freeman  
Mr. Pronovost  
Planning Division File  
IAB File



DEPARTMENT OF THE ARMY  
NEW ENGLAND DIVISION, CORPS OF ENGINEERS  
424 TRAPELO ROAD  
WALTHAM, MASSACHUSETTS 02254-9149

REPLY TO  
ATTENTION OF

January 13, 1987

Planning Division  
Impact Analysis Branch

Mr. Richard H. Schaefer, Director  
Northeast Regional Office  
National Marine Fisheries Service  
14 Elm Street - Federal Building  
Gloucester, Massachusetts 01930

Dear Mr. Schaefer:

On June 23, 1986 Richard Ring and Collis Adams of my staff met, in Gloucester, with the chief and deputy of your Services Division and the branch chiefs of Analytical Services, Financial Services and Habitat Conservation to discuss the Point Judith, Rhode Island navigation improvement study currently underway at the New England Division. The purpose of the meeting was to inform NMFS Regional Office personnel that our Office of the Chief of Engineers, which performs the Washington level review function, now requires that a letter of concurrence be solicited from the NMFS Regional Office when an economic benefit for increased landings of fish is projected to occur in a port subsequent to navigation improvements undertaken by the Corps. The Point Judith study is the first to claim this type of benefit under the current requirement.

Attached is the economic analysis section of the Point Judith study. All economic benefits which are expected to accrue to navigation improvements are enumerated in this section including benefits for increased landings of fish. Also attached is a copy of Corps of Engineers benefit estimation procedures as they relate to commercial fishing development. Since a benefit for increased landings is claimed I ask you to please forward the economic analysis to Dr. Stanley Wang of the Analytical Services Branch for review by his staff. Should questions or concerns arise during the review please contact Richard Ring, the regional economist who performed the analysis, for further clarification. He can be reached at (617) 647-8643 or PTS 939-7643. Upon completion of your review of the economic benefit for increased landings of fish, I would appreciate a letter stating concurrence as this is essential for our review process and would continue movement of the project toward construction. A copy of the entire Point Judith study document will be provided to you when completed.

Major inputs to the Point Judith economic analysis were provided by NMF3 employees from several offices. I wish to especially thank Pat Kurkul and Bob Sedgwick of your Regional Office and Susan Murphy of the Point Judith, Rhode Island Statistics Office.

Thank you very much for your assistance and attention to this review.

Sincerely,

Joseph L. Ignazio  
Chief, Planning Division

Attachment

Copy Furnished:  
Dr. Stanley Wang  
Northeast Regional Office  
National Marine Fisheries Service  
14 Elm Street - Federal Building  
Gloucester, Massachusetts 01930

cc: Mr. Ring-113N  
Mr. Pronovost-113N  
Mr. Freeman-114S  
Mr. Rubin-113N  
Plng Div File  
Reading File



# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
ECOLOGICAL SERVICES  
P.O. BOX 1518  
CONCORD, NEW HAMPSHIRE 03301

Joseph L. Ignazio, Chief  
Planning Division  
U.S. Army Corps of Engineers  
424 Trapelo Road  
Waltham, Massachusetts 02254-9149

AUG 27 1986

Dear Mr. Ignazio:

This responds to your June 5, 1986 request for input under the Fish and Wildlife Coordination Act regarding the Point Judith Harbor project in Rhode Island. The proposed project involves (1) widening of the existing 15 foot deep west bulkhead channel in Galilee from 150 feet to 200 feet, (2) continuation of the west bulkhead channel into the north basin at a depth of 10 feet and width of 150 feet, (3) widening and deepening of the west channel from State Pier No. 4 to High Point from 100 feet to 150 feet and 6 feet to 15 feet, respectively, and (4) disposal of suitable dredged material along Sand Hill Cove and/or East Matunuck State Beach.

I delayed responding to your request until Ron Joseph of my staff had an opportunity to participate in a Corps of Engineers sponsored interagency field review of the project site on July 29, 1986. Although not specifically requested in your letter, I am also providing you with input on the presence of Federally listed and proposed endangered or threatened species within the impact area of the proposed project.

Our review shows that a pair of piping plovers, a Federally listed Threatened species nested at nearby East Matunuck State Beach in 1985, a potential disposal site for dredged material from your project. We do not anticipate any conflicts with this species since the birds are not present this year and your proposed disposal activity would be conducted during the fall months. However, we urge you to work closely with Mr. Chris Raithel of the Rhode Island Department of Environmental Management to obtain the most current information on plovers in the project area to avoid impacting their nesting habitat. No other Federally listed species under our jurisdiction are known to exist in the project impact area. You may wish to contact the Rhode Island Department of Environmental Management for information on state listed species. We also suggest you contact the National Marine Fisheries Service for information on Federally listed marine species since an endangered leatherback turtle recently washed ashore near the proposed project. No Biological Assessment or further consultation is required with us under Section 7 of the Endangered Species Act. Should project plans change, or if additional information on listed or proposed species becomes available, this determination may be reconsidered. A list of Federally designated endangered and threatened species in Rhode Island is enclosed for your information.

There are a number of estuarine resources that need to be addressed during your planning process. In the North Basin area of Calilee near Little Comfort Island, the proposed channel widening has the potential to impact eel grass beds. Most of these beds lie directly south and adjacent to your proposed activity. Due to their ecological importance to numerous invertebrate and vertebrate species, these beds should not be impacted by channel dredging operations. Sampling conducted by the Corps of Engineers and the Fish and Wildlife Service on July 29 revealed that it is possible to widen the channel to the 200 foot width while avoiding these beds. However, dredging operations must be closely monitored in the North Basin to avoid impacting the productive eel grass beds. In accordance with the Fish and Wildlife Service's Mitigation Policy, we consider these eelgrass beds to be resource category 2 habitat because of their high value to estuarine life and relative scarcity.

Soft-shell clams, quahogs and scallops occur to the east of Great Island Bridge, approximately 0.5 mile from the proposed project but within the impact area. We are concerned that turbidity generated during the dredging of the channel may impact these shellfish beds, especially during incoming tides. We understand that hydraulic dredging will most likely be the method used to deepen and widen the channels. This should minimize turbidity; however, as a safety precaution, we recommend the Corps establish monitoring stations near shellfish beds and eelgrass beds to insure that drifting silt and sand from the operation is not impacting these resources.

Bioassay and bulk sediment tests should be conducted on the dredged material to determine contaminant levels prior to selection of a beach disposal site. If the material is clean, we prefer the material be deposited onto Sand Hill Cove Beach rather than on East Matunuck State Beach. First, Sand Hill Cove Beach has undergone more serious erosion problems than East Matunuck State Beach. Secondly, the long shore drift of sand is from west to east. Therefore, any sand placed on East Matunuck State Beach would eventually drift back into the channel from which it was dredged. Material should be used to replace eroded beach and not to create new beach. Your planning process needs to pinpoint disposal of material found unsuitable for beach nourishment.

Impacts of the proposed project on winter flounder, tautog, white perch, bluefish, menhaden and striped bass should also be addressed during your planning process. Winter flounder is perhaps the most important finfish in Point Judith Harbor. This species begins migration into the harbor in mid-October prior to spawning which occurs between December and late-March. Most of the fish leave the harbor in April. According to the Rhode Island Department of Environmental Management, no known flounder spawning grounds occur in the project impact area although it may serve as a nursery area.



According to the Rhode Island Department of Fish and Wildlife, bufflehead, red-breasted merganser, and white-winged scoter are the primary wintering waterfowl near Little Comfort Island. The area is also used to a lesser degree by mallard, black duck, Canada geese, and brant. These species need to be addressed as well in your planning process since some of these birds may be displaced if your dredging operation extends into late fall or early winter.

Please contact Ron Joseph of my staff if we can be of further assistance.

Sincerely yours,

*Gordon E. Beckett*

Gordon E. Beckett  
Supervisor  
New England Area

CC: RO/HR Reading File  
NIFS, Sue Mello  
EPA, Tom Addison  
Art Ganz, RI DEM  
Joe Horowitz, CE  
ES: RJoseph:jd:8-22-86:834-4411



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

HISTORICAL PRESERVATION COMMISSION

Old State House  
150 Benefit Street  
Providence, R.I. 02903  
(401) 277-2678

August 13, 1986

Mr. Joseph L. Ignazio  
Chief, Planning Division  
Impact Analysis Branch  
Army Corps of Engineers  
424 Trapelo Road  
Waltham, MA 02254

Dear Mr. Ignazio:

Thank you for your letter of 6 August 1986 requesting Rhode Island State Historic Preservation Officer's comments on proposed improvements to navigation channels at Point Judith. In accordance with the Procedures of the Advisory Council on Historic Preservation (36 CFR 800) the proposed undertaking will have no effect on significant historic or cultural resources. Therefore, we have no objections.

Very truly yours,

*fr* *Virginia A. Fitch*  
Edward F. Sanderson  
Executive Director  
Deputy State Historic  
Preservation Officer

/aa



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
NEW ENGLAND DIVISION, CORPS OF ENGINEERS  
424 TRAPELO ROAD  
WALTHAM, MASSACHUSETTS 02254-9149

August 6, 1986

Planning Division  
Impact Analysis Branch

Mr. Edward Sanderson  
Rhode Island Historic Preservation Commission  
150 Benefit Street  
Providence, Rhode Island 02903

Dear Mr. Sanderson:

Enclosed is a map illustrating a proposed navigation project in Point Judith, Rhode Island. At present, our planning efforts involve an evaluation of the following: 1) widening of the existing 15 feet deep west bulkhead channel from 150 to 200 feet, 2) continuation of the west bulkhead channel into the north basin at a depth of 10 feet and width of 150 feet, 3) widening and deepening of the west channel from State Pier No. 4 to High Point from 100 feet to 150 feet and 6 feet to 15 feet respectively, and 4) placement of suitable dredged material along Sand Hill Cove and/or East Manuntuck State Beach.

Please review this material and send our office any comments you have regarding the presence of historic or prehistoric resources in the project area. If you need further information or have any questions, please contact Ms. Marianne Matheny at (617) 647-8140.

Sincerely,

Joseph L. Ignazio  
Chief, Planning Division

Enclosure

cc:  
Ms. Matheny  
Mr. Hubbard  
Mr. Adams-CDB  
Mr. Rubin  
Mr. Pronovost  
IAB Files  
Reading Files  
Plng Div Files



DEPARTMENT OF THE ARMY  
NEW ENGLAND DIVISION, CORPS OF ENGINEERS  
424 TRAPELO ROAD  
WALTHAM, MASSACHUSETTS 02254-9149  
July 11, 1986

REPLY TO  
Planning Division  
Coastal Development Branch

Rear Admiral Robert B. Johanson  
First Coast Guard District  
150 Causeway Street  
Boston, Massachusetts 02114

Dear Admiral Johanson:

This is in reference to proposed navigation improvements in Point Judith Pond at Narragansett and South Kingston, Rhode Island.

At present, our planning efforts involve an evaluation of the following: 1) widening of the existing 15 foot deep west bulkhead channel from 150 to 200 feet, 2) continuation of the west bulkhead channel into the north basin at a depth of 10 feet and width of 150 feet, 3) widening of the west channel from State Pier No. 4 to High Point from 100 feet to 150 feet and deepening from 6 feet to 15 feet, and 4) placement of suitable dredged material along Sand Hill Cove and/or East Matunuck State Beach. A project location plan has been enclosed for your information.

One purpose of the Detailed Project Study is to identify the potential impacts and concerns of Federal, State and local agencies. This information will be evaluated and incorporated in our final report. As a result, we are requesting that the First Coast Guard District provide comments on the proposed navigation improvement project, particularly with regards to channel design, buoy placement, vessel traffic, navigational hazards, etc.

Should you have any questions concerning this matter, please feel free to contact the undersigned at (617) 647-8220 or Mr. Collis Adams, Project Manager, Coastal Development Branch, Planning Division, at 617-647-8553.

Sincerely,

Thomas A. Rhen  
Colonel, Corps of Engineers  
Division Engineer

Enclosure

cc: CDB(2)  
Exec. Ofc.  
Plng. Div. File  
Read File



DEPARTMENT OF THE ARMY  
NEW ENGLAND DIVISION, CORPS OF ENGINEERS  
424 TRAPELO ROAD  
WALTHAM, MASSACHUSETTS 02254-9149

REPLY TO  
ATTENTION OF

March 11, 1985

Planning Division  
Coastal Development Branch

Mr. Stephen A. Alfred  
Town Manager  
Town of South Kington  
66 High Street  
Wakefield, Rhode Island 02879

Dear Mr. Alfred:

Reference is made to your March 6, 1984 request for this office to undertake a navigation study for Pt. Judith, Rhode Island under the authority of Section 107 of the 1960 River and Harbor Act, as amended.

In response to your request, an Initial Appraisal was undertaken to determine the feasibility and justification for Federal involvement. It has been determined that the proposed navigation improvements for commercial fishing appear economically feasible, and a detailed study is warranted. I would like to emphasize, however, that this determination is only preliminary in nature and no final decisions have been made as to the overall feasibility of the proposed action. Such a determination will be made upon completion of the final stage of study known as a Detailed Project Study which will include an assessment of economic and engineering feasibility, environmental impacts, and social and cultural effects.

Enclosed is a list of eight items of local cooperation which a community participating in a navigational improvement authorized under Section 107 must agree to meet before project implementation. If a favorable plan of improvement is recommended in the Detailed Project Report and authorized by the Chief of Engineers, you would then be required to enter into a contractual agreement to meet these items of local cooperation during the preparation of plans and specifications prior to construction.

You should be aware of cost sharing formulae that have been proposed by the Administration and could go into effect for fiscal year 1986 which begins October 1, 1985. Under traditional cost sharing policy, a project built solely for commercial navigation would require no local cost contribution towards planning, construction or subsequent maintenance of the project. However, the new cost sharing proposals would require the local sponsor to share the cost of the Detailed Project Study and to share in the

cost of preconstruction engineering and project construction and maintenance.

If the local sponsor is required to share the cost of the Detailed Project Study, an assessment of the level of support and willingness of the sponsor to share this cost will be determined during our next phase of study which is a 100% Federally funded reconnaissance-level investigation.

At this time I must have a letter from you stating your interest for us to proceed with the investigation. Your letter, along with my recommendations, will be forwarded to the Office of the Chief of Engineers. Should they approve my recommendation, Point Judith Pond will be placed on our list of pending project studies and we will proceed when funds become available.

Should you have any questions, please feel free to contact me at (617) 647-8220. Mr. Collis Adams, of my staff, is the project manager for this investigation. If your staff desires more information, he can be reached at (617) 647-8549.

Sincerely,

Carl B. Sciple  
Colonel, Corps of Engineers  
Division Engineer

Enclosure

Copy Furnished:  
Exec. Ofc.  
CDE (3)  
Read File  
Plng. Div. Files



DEPARTMENT OF THE ARMY  
NEW ENGLAND DIVISION, CORPS OF ENGINEERS  
424 TRAPELO ROAD  
WALTHAM, MASSACHUSETTS 02254-9149

REPLY TO  
ATTENTION OF

March 11, 1985

Planning Division  
Coastal Development Branch

Mr. Patrick Scheibel  
Town Manager  
Town of Narragansett  
25 Fifth Avenue  
Narragansett, Rhode Island 02882

Dear Mr. Scheibel:

Reference is made to your May 20, 1983 request for this office to undertake a navigation study for Pt. Judith, Rhode Island under the authority of Section 107 of the 1960 River and Harbor Act, as amended.

In response to your request, an Initial Appraisal was undertaken to determine the feasibility and justification for Federal involvement. It has been determined that the proposed navigation improvements for commercial fishing appear economically feasible, and a detailed study is warranted. I would like to emphasize, however, that this determination is only preliminary in nature and no final decisions have been made as to the overall feasibility of the proposed action. Such a determination will be made upon completion of the final stage of study known as a Detailed Project Study which will include an assessment of economic and engineering feasibility, environmental impacts, and social and cultural effects.

Enclosed is a list of eight items of local cooperation which a community participating in a navigational improvement authorized under Section 107 must agree to meet before project implementation. If a favorable plan of improvement is recommended in the Detailed Project Report and authorized by the Chief of Engineers, you would then be required to enter into a contractual agreement to meet these items of local cooperation during the preparation of plans and specifications prior to construction.

You should be aware of cost sharing formulae that have been proposed by the Administration and could go into effect for fiscal year 1986 which begins October 1, 1985. Under traditional cost sharing policy, a project built solely for commercial navigation would require no local cost contribution towards planning, construction or subsequent maintenance of the project. However, the new cost sharing proposals would require the local sponsor to share the cost of the Detailed Project Study and to share in the



cost of preconstruction engineering and project construction and maintenance.

If the local sponsor is required to share the cost of the Detailed Project Study, an assessment of the level of support and willingness of the sponsor to share this cost will be determined during our next phase of study which is a 100% Federally funded reconnaissance-level investigation.

At this time I must have a letter from you stating your interest for us to proceed with the investigation. Your letter, along with my recommendations, will be forwarded to the Office of the Chief of Engineers. Should they approve my recommendation, Point Judith Pond will be placed on our list of pending project studies and we will proceed when funds become available.

Should you have any questions, please feel free to contact me at (617) 647-8220. Mr. Collis Adams, of my staff, is the project manager for this investigation. If your staff desires more information, he can be reached at (617) 647-8549.

Sincerely,

Carl R. Sciple  
Colonel, Corps of Engineers  
Division Engineer

Enclosure

Copy Furnished:  
Exec. Ofc.  
CEE (3)  
Read File  
Plng. Div. Files



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Environmental Management  
DIVISION OF PLANNING AND DEVELOPMENT  
83 Park Street  
Providence, R. I. 02903

November 23, 1984

Mr. Collis Adams  
Study Manager  
Corps of Engineers  
424 Trapelo Road  
Waltham, MA 02154

Dear Collis:

RE: PORT OF GALILEE, R.I., SECTION 107, SMALL NAVIGATION PROJECT

Attached for your information is the long awaited data for the Galilee section 107 study. This supplements the previously submitted material you received from Brad Monahan for the Jerusalem to High Point Channel, a copy of which is herewith furnished.

My apologies for the delay in assembling this material. If I can be of further assistance, or if you have any questions pertaining to the data, please do not hesitate to call me.

Sincerely,

Lee R. Whitaker

Enclosures (3)

cc Patrick C. Scheidel, Town Manager, Narragansett  
Stephen A. Alfred, Town Manager, South Kingstown  
Galilee Advisory Committee



# Town of South Kingstown, R. I.

OFFICE OF TOWN MANAGER

Town Hall

Wakefield, Rhode Island 02879

STEPHEN A. ALFRED  
Town Manager  
Tel. 401-789-9331

March 6, 1984

Carl B. Sciple  
Colonel of Engineers  
New England Division Army Corps of Engineers  
424 Trapelo Road  
Waltham, MA 02154

Dear Colonel Sciple:

Re Port of Galilee, Narragansett, RI, Request for Small Navigation Project  
per Section 107 of the 1960 Rivers and Harbors Act as Amended

The Town of South Kingstown endorses the request for channel improvements in the Port of Galilee and would also like to request that the project be expanded to include Snug Harbor to High Point.

I am enclosing a copy of the Town Council's resolution, and we appreciate any help you can give us relative to the above request.

Sincerely,

Stephen A. Alfred  
Town Manager

SAA:MAC

Enclosure

Copy to Lee R. Whitaker



# Town of South Kingstown, R. I.

TOWN CLERK'S OFFICE

CLERK OF THE TOWN COUNCIL AND PROBATE COURT

Town Hall, 66 High Street

Wakefield, Rhode Island 02879

Elizabeth M. Wilson

Town Clerk & Probate Clerk

401-789-9331

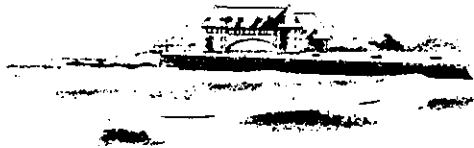
At a REGULAR SESSION of the Town Council of the Town of South Kingstown, County of Washington, in the State of Rhode Island, held at the Town Hall, in and for said Town on the 27th day of February A.D., 1984 at 7:30 P.M.

PRESENT: Messrs. Gilbert V. Indeglia, President  
Charles P. Kelley, Vice President  
Janet A. Bannister  
Charles J. Hamilton, Jr.  
Harold F. Smith, Sr. MEMBERS

VOTED: that the Town Council of the Town of South Kingstown endorse the Department of Environmental Management request to dredge the Port of Galilee. The Town Council also voted to request the Army Corps of Engineers to expand the project to include Snug Harbor to High Point.

A True Copy

ATTEST: Elizabeth M. Wilson, CMC  
ELIZABETH M. WILSON, CMC, Town Clerk



## TOWN OF NARRAGANSETT

Town Hall, 25 Fifth Avenue, Narragansett, R.I. 02882 • Tel. 789-6000

### NARRAGANSETT TOWN COUNCIL

Maurice J. Loontjens, Jr., Pres.  
Joseph A. LaBelle, Jr., Pres. Pro Tem.  
Joan Bartolomeo  
Frank A. Nora  
Alfred Testa, Jr.

June 21, 1983

DEPARTMENT OF THE ARMY  
Carl B. Sciple, Colonel  
Corps of Engineers  
424 Trapelo Road  
Waltham, Massachusetts 02254

Dear Mr. Sciple:

At the Town Council meeting held June 20, 1983, your communication was received notifying the Council that the Corps of Engineers has initiated a small navigation improvement study for Pt. Judith Harbor, same in response to the Council's letter dated May 20, 1983, and after consideration it was

VOTED: That said communication be received  
and placed on file.

Very truly yours,

*Arline B. Klingensmith, CMC*  
Arline B. Klingensmith, CMC  
Council Clerk

ABK/emf



DEPARTMENT OF THE ARMY  
NEW ENGLAND DIVISION, CORPS OF ENGINEERS  
424 TRAPELO ROAD  
WALTHAM, MASSACHUSETTS 02254-9149

JUN 9 1963

REPLY TO  
ATTENTION OF

Planning Division  
Coastal Development Branch

Ms. Arline B. Klingensmith, CTE  
Town Council Clerk  
Town of Narragansett  
Narragansett, Rhode Island 02882

Dear Ms. Klingensmith:

I am pleased to inform you that we have initiated a small navigation improvement study for Pt. Judith Harbor, Narragansett, Rhode Island in response to your letter dated May 20, 1963.

The initial study stage will be a reconnaissance which will determine if further detailed study of providing improvements to the existing Federal navigation project at Pt. Judith Harbor is warranted. The findings of the reconnaissance investigation will be transmitted to you for your review and concurrence.

Should you have any questions, please contact the project manager, Mr. Collis Adams, at (617) 647-8549.

Sincerely,

Carl E. Sciple  
Colonel, Corps of Engineers  
Division Engineer

Copy Furnished:  
Exec. Ofc.  
Mr. Ignazio  
Programs Ofc.  
Reading File  
Plan. Div. Files

CDB (3)



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Environmental Management  
OFFICE OF THE DIRECTOR  
83 Park Street  
Providence, R.I. 02903

May 12, 1983

Carl B. Sciple  
Colonel of Engineers  
New England Division Army  
Corps of Engineers  
424 Trapelo Road  
Waltham, Mass. 02154

RE: Port of Galilee, Narragansett, R.I. Request for  
Small Navigation Project per Section 107 of the  
1960 Rivers and Harbors Act as Amended

Dear Colonel:

On May 5, 1983, a meeting was conducted at the Port of Galilee in the Town of Narragansett, R.I. to discuss the above-referenced projects. In attendance were representatives of the Town of Narragansett, the R.I. Department of Environmental Management and the Army Corps of Engineers.

Richard DeSimone of the Small Project Division discussed with the group the Corps programs as they relate to small navigation improvement. As discussed at the meeting, both the State of Rhode Island and the Town of Narragansett are interested in improvements at the Port of Galilee and our willingness to work with the Corps to pursue this matter. Therefore, in accordance with the provisions of Section 107 of the Rivers and Harbors Act of July 14, 1960, as amended, we hereby request the Army Corps of Engineers investigate necessary improvements to the Port of Galilee.

Very truly yours,

Robert L. Bendick, Jr.  
Director

RLB/VAB/ms  
cc: Dick DeSimone  
Bill McCarthy



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Administration  
STATEWIDE PLANNING PROGRAM  
265 Melrose Street  
Providence, Rhode Island 02907

June 5, 1986

Mr. Joseph F. Arruda  
Chief of Transportation Planning  
Rhode Island Department of Transportation  
369 State Office Building  
Providence, RI 02903

Dear Mr. Arruda:

Re: Comments on Galilee Traffic Study

The Office of State Planning has reviewed the Traffic Circulation Concept and Design Study for the Port of Galilee, dated April, 1986, and supports the preferred alternative with the possible exception of the extension of the Galilee Connector Road.

This Office is on record in support of the U.S. Army Corps of Engineers' proposed navigation improvements to the Port of Galilee and the West Channel in lower Point Judith Pond. Also, the Department of Environmental Management has under design major capital improvements on the west bulkhead and in the North Basin. This project received the highest priority rating in the State's Overall Economic Development Program.

This Office is preparing a federal grant application for the DEM project, and we have recently learned through discussion with the Corps of Engineers and the DEM project engineer that there will be a continuous need for a dredged material disposal area in the Port. An estimated 35,000 to 40,000 cubic yards of material will require an upland disposal area from the two aforementioned projects during the next five years. Beyond that, a disposal site will be required for periodic maintenance dredging.

The only area in the Port now available for this type of disposal lies to the east of Great Island Road, south of the Escape Road. The preferred alternative has an extension of the Galilee Connector Road traversing this disposal area. By extending the Connector Road to the Escape Road, an estimated 10,000 to 15,000 cubic yards of disposed space will be lost and this could result in more costly disposal



Joseph Arruda

page 2

June 5, 1986

options. It may be prudent to leave the dredge disposal area intact. Based on this new information, it is recommended that a thorough analysis of this issue be made prior to a decision to extend the Connector Road.

Yours very truly,

Daniel W. Varin  
Chief

DWV:cac

cc: Robert L. Bendick, Jr., DEM  
Frank Geremia, DEM  
Collis Adams--COE, Waltham



DEPARTMENT OF THE ARMY  
NEW ENGLAND DIVISION, CORPS OF ENGINEERS  
424 TRAPELO ROAD  
WALTHAM, MASSACHUSETTS 02254-9149

June 5, 1986

REPLY TO  
ATTENTION OF

Planning Division  
Impact Analysis Branch

Mr. Gordon Beckett  
U.S. Fish and Wildlife Service  
Ecological Services  
P.O. Box 1518  
Concord, New Hampshire 03301-1518

Dear Mr. Beckett:

The purpose of this letter is to initiate coordination under the Fish & Wildlife Coordination Act for the proposed Point Judith Harbor - Section 107 project in Rhode Island during the Fiscal Year 1986.

The tasks for the proposed Point Judith project include the (1) widening of the existing 15 foot deep west bulkhead channel in Galilee from 150 feet to 200 feet width; (2) continuation of the west bulkhead channel into the north basin at Galilee at a depth of 10 feet and width of 150 feet; (3) widening the west channel in Jerusalem, from the state piers to High Point, from 100 feet wide to 150 feet wide deepening from 6 feet deep to 15 feet deep. Incremental depth alternatives of 12 feet and 18 feet in the Federal channels may be utilized as a cost effective measure to accommodate navigational requirements.

At present, three disposal sites are under consideration for the disposal of dredged material. They include an upland site and two beach sites, East Matunuck State Beach and Sand Hill Cove Beach east of Galilee. One hundred forty thousand cubic yards of dredged material, composed mainly of sand, will be deposited at one or more of the described sites.

A meeting will be coordinated with U.S. Fish and Wildlife Services and U.S. Army Corps of Engineers within the next two weeks. If you have any questions concerning the proposed project, please feel free to contact one of the following individuals:

Collis Adams (Project Manager) - FTS 839-7549  
William A. Hubbard (Marine Ecologist) - FTS 839-7236.

Sincerely,

Joseph L. Ignazio  
Chief, Planning Division

ENC:

MS. Demos  
Mr. Hubbard  
Mr. Adams-114S  
Mr. Bellmer  
Mr. Pronovost  
IAB Files  
Reading Files  
Plna Div Files



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Environmental Management  
OFFICE OF ENVIRONMENTAL COORDINATION  
~~XXXXXX~~ 9 Hayes Street  
Providence, R.I. 02903

May 14, 1986

Mr. Joseph L. Ignazio  
Chief, Planning Division  
Department of the Army  
NE Division  
424 Trapelo Road  
Waltham, MA 02254-9149

Dear Mr. Ignazio:

This letter is in response to your request for information as part of the Detailed Project Study for the proposed navigation improvements in Point Judith at Narragansett and South Kingstown.

There has been no extensive effort to characterize the sediments of Point Judith Pond; however, the available data suggests there are not significant concentrations of toxic substances in the sediment. Four surface sediment samples were taken by the Corps of Engineers. The exact locations of these samples were not reported; however, three samples qualified as Class I and one sample qualified as Class II sediment type (Seavey and Pratt, Marine Technical Report 72). Obviously, a site specific characterization of the sediments is necessary to assess the environmental impacts of the proposed maintenance dredging operation in Point Judith Pond.

The tidal currents in the southern part of the pond are substantially greater than in the portion south of Ram Island. In the lower pond and Harbor of Refuge strong tidal currents of 1 to 3 knots progress north and south every 12 hours. These currents are complex with significant lags between flood water at the breachway and flood water in various coves. Such lags occur between

East Pond and the Harbor and Potter and Point Judith creating particularly conservative circulation patterns in Potter Pond and East Pond (SAMP for Salt Pond Region). The daily exchange between the southern region and the Sound is approximately 5 percent of the volume of waters in the southern portion of the pond (CRMC, Special Area Management Plan for the Salt Pond Region).

Dredging operations at the head of Point Judith Pond will disperse suspended sediments into Point Judith and Potters Pond as well as Block Island Sound. The increase in suspended solid concentrations in the waters of Potters Pond, East Pond and other areas with poor circulation will likely depress dissolved oxygen levels and deposit a layer of fine sediments. Natural areas potentially impacted, as a result of the pond's hydrological characteristics include Galilee Bird Sanctuary and Succotash Marsh. Both marshes are critical wildlife habitats made especially so by the development of the port facilities at Galilee and Jerusalem and the destruction of salt marshes at the mouth of the pond. Scheduling the dredging operations at a time when both productivity and water temperatures are low will minimize the impact to plant and animal life.

The waters at the mouth of Point Judith Pond and adjacent to Snug Harbor are classified as SB. The remaining waters potentially impacted by the dredging operations, including Point Judith and Potters Ponds and Block Island Sound are Class SA.

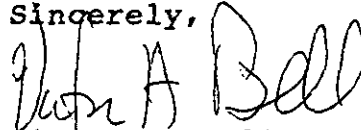
The Salt Pond Special Area Management Plan (CRMC, 1984) identified the northern portion of Point Judith Pond and the waters off Harbor Island as important Winter flounder spawning and feeding grounds. CRMC recommends that all dredging should be avoided during the winter flounder spawning season from January through March.

Over the past decade, Point Judith Pond has supported various commercial fisheries, including winter flounder, eel, scallop and quahog. The lower pond is also a popular recreational fishing area. The fish stocks and the related commercial fisheries have undergone wide fluctuations over the years. These fluctuations are indicative of the fragile ecosystem of the salt ponds.

A major concern of CRMC as expressed in the Salt Pond Special Area Management Plan is the prevention of water quality degradation and the maintenance of viable fish and shellfish populations in Point Judith Pond. The specifications set by CRMC for dredging operations in the pond are designed to maintain its ecological balance and are supported by DEM. The proposed navigational improvements in Point Judith Pond as specified in your letter of April 9, 1986 are compatible with these recommendations.

If you have any questions regarding these comments, please feel free to call me.

Sincerely,

A handwritten signature in dark ink, appearing to read "Victor A. Bell". The signature is fluid and cursive, with the first name "Victor" and last name "Bell" being the most prominent parts.

Victor A. Bell  
Chief

VAB:lmh  
L2VB



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE

Management Division  
Habitat Conservation Branch  
2 State Fish Pier  
Gloucester, MA 01930-3097

May 7, 1986

F/NER74:PK

Mr. Joseph L. Ignazio  
New England Division  
Corps of Engineers  
424 Trapelo Road  
Waltham, Massachusetts 02254-9149

Dear Mr. Ignazio;

This is in response to your letter to Douglas Beach dated April 29, 1986, requesting a list of endangered or threatened species present in the area of the small boat navigation project at Narragansett and South Kingston, Rhode Island in Point Judith Pond pursuant to Section 7(c) of the Endangered Species Act of 1973 (ESA). We have identified the presence of no endangered or threatened species in the project area that come under the jurisdiction of the National Marine Fisheries Service. Should project plans change, or additional information on listed or proposed species become available, this determination may be reconsidered.

For your information, we are attempting to reduce the need for duplicate responses on projects with marine resource and endangered species concerns. Henceforth, our field station representatives will address endangered species concerns in their initial response to any project. This should streamline the review process by including the preliminary Section 7 screening for the presence of endangered species in the initial review by our field staff. Therefore, for those projects where the Corps needs a written response under the ESA, please ask our field representative to incorporate endangered species concerns in their review. Should endangered species become a concern for any project, Douglas Beach will be notified by the field representative, and will become involved in the project review process if necessary. If you have any questions on this, please contact me at FTS 837-9346.

Sincerely,

Peter Kube  
Biologist





# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
ECOLOGICAL SERVICES  
P.O. BOX 1518  
CONCORD, NEW HAMPSHIRE 03301

Joseph Ignazio, Chief  
Planning Division  
New England Division, Corps of Engineers  
424 Trapelo Road  
Waltham, Massachusetts 02254

MAY 07 1986

Dear Mr. Ignazio:

This responds to your April 28, 1986 request for information on the presence of Federally listed and proposed endangered or threatened species within the impact area of a proposed small boat navigation project at Narragansett and South Kingston, Rhode Island.

Our review shows that piping plovers, a Federally listed threatened species may exist at one of your proposed disposal sites. Plovers have nested at East Matunuck State Beach in South Kingston in the last several years. Therefore, the needs of this species must be addressed in your Biological Assessment before suitable dredged material is placed at East Matunuck State Beach.

Furthermore, we suggest you contact Mr. Chris Raithel of the Rhode Island Department of Fish and Wildlife for site specific information on piping plovers. We look forward to reviewing your Biological Assessment of this project.

This response relates only to endangered species under our jurisdiction. It does not address other legislation or our concerns under the Fish and Wildlife Coordination Act.

A list of Federally designated endangered and threatened species in Rhode Island is enclosed for your information. Thank you for your cooperation and please contact us if we can be of further assistance.

Sincerely yours,

Enclosure

Gordon E. Beckett  
Supervisor  
New England Area



FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES  
IN RHODE ISLAND

Common Name	Scientific Name	Status	Distribution
-------------	-----------------	--------	--------------

FISHES:

Surgeon, shortnose*	<u>Acipenser brevirostrum</u>	E	Atlantic Coastal Waters
---------------------	-------------------------------	---	-------------------------

REPTILES:

Turtle, green*	<u>Chelonia mydas</u>	T	Oceanic straggler in Southern New England
Turtle, hawksbill*	<u>Eretmochelys imbricata</u>	E	Oceanic straggler in Southern New England
Turtle, leatherback*	<u>Dermochelys coriacea</u>	E	Oceanic summer resident
Turtle, loggerhead*	<u>Caretta caretta</u>	T	Oceanic summer resident
Turtle, Atlantic ridley*	<u>Lepidochelys kempii</u>	E	Oceanic summer resident

BIRDS:

Eagle, bald	<u>Haliaeetus leucocephalus</u>	E	Entire state
Falcon, American peregrine	<u>Falco peregrinus anatum</u>	E	Entire state-reestablishment to former breeding range in progress
Falcon, Arctic peregrine	<u>Falco peregrinus tundrius</u>	E	Entire state migratory-no nesting
Plover, Piping	<u>Charadrius melodus</u>	T	Entire State - nesting habitat

MAMMALS:

Cougar, eastern	<u>Felis concolor cougar</u>	E	Entire state - may be extinct
Whale, blue*	<u>Balaenoptera musculus</u>	E	Oceanic
Whale, finback*	<u>Balaenoptera physalus</u>	E	Oceanic
Whale, humpback*	<u>Megaptera novaeangliae</u>	E	Oceanic
Whale, right*	<u>Eubalaena spp. (all species)</u>	E	Oceanic
Whale, sei*	<u>Balaenoptera borealis</u>	E	Oceanic
Whale, sperm*	<u>Physeter catodon</u>	E	Oceanic

MOLLUSKS:

NONE

PLANTS:

Small Whorled Pogonia	<u>Isotria meleoloides</u>	E	Providence, Kent Counties
-----------------------	----------------------------	---	---------------------------

\* Except for sea turtle nesting habitat, principal responsibility for these species is vested with the National Marine Fisheries Service



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Administration  
COASTAL PLANNING PROGRAM

April 22, 1986

April 22, 1986

Mr. Joseph L. Ignazio  
Chief, Planning Division  
New England Division  
Corps of Engineers  
424 Trapelo Road  
Waltham, MA 02254

Dear Mr. Ignazio:

Re: Navigation Improvements--Lower  
Point Judith Pond

This agency has completed its review of the proposed navigation improvements to lower Point Judith Pond at Galilee and the West Channel from State Pier No. 4 north to High Point. The project is consistent with the State Guide Plan and the state's Land Use Plan. The project will sustain and promote the growth and development of the Port of Galilee and Snug Harbor commercial fishing and other marine-related industry. These are two industries with the most potential for growth in Rhode Island according to the April 10, 1986, update of the state's Economic Development Strategy. (See enclosed news article.) The land uses at Galilee and Snug Harbor are currently commercial and industrial and this project is consistent with these uses.

The Rhode Island Coastal Resources Management Program as amended June 28, 1983, and its companion Special Area Plan for Point Judith Pond, adopted November 27, 1984, designate the waters at Galilee, Jerusalem, and Snug Harbor as capable of sustaining either commercial and recreational uses, or industrial waterfront uses. The state's policies enunciated by the Coastal Program "encourage and support modernization and increased economic activity in the marine industries," and "commercial activity related to shipping and commercial fisheries." Commercial and recreational waters are capable of sustaining the berthing, mooring, and servicing of commercial fishing vessels, among other uses.

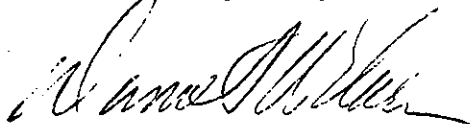
Snug Harbor is the location of a significant marine shipbuilding and repair industry, and several marine railways are operational there. These can handle large vessels in the 70- to 90-foot range with draft requirements for a 15-foot deep channel. Navigational access to High Point is in dire need of improvement. The channel improvements around the Galilee West Bulkhead and North Basin are necessary to improve access to the fish offloading facilities and the new docks

Joseph Ignazio  
page 2  
April 22, 1986

recently constructed and those planned by the Department of Environmental Management for construction in 1986-87. Dredged material disposal is a concern. It is our recommendation that as much of the material as possible be used for beach nourishment and if necessary, and possible, dune construction and stabilization at state and local beaches. East Matunuck state beach is particularly in need of beach nourishment. Limited land area remains at the Port of Galilee for land disposal, and only the most unsuitable material (for beach nourishment) should be deposited on land at the Port.

Thank you for the opportunity to comment on this project.

Yours very truly,



Daniel W. Varin  
Chief

DWV:cac

Enclosure

cc: Robert L. Bendick, Jr., DEM  
Lee Whitaker, OSP  
Stephen Alfred, South Kingstown  
Patrick Scheidel, Narragansett



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
**NATIONAL MARINE FISHERIES SERVICE**

Management Division  
Habitat Conservation Branch  
2 State Fish Pier  
Gloucester, MA 01930-3097

March 17, 1986

F/NER74:TEB

John Corrigan, Regional Director  
Economic Development Administration  
Liberty Square Building  
105 South 7th Street, First Floor  
Philadelphia, PA 19106

Dear Mr. Corrigan:

I submit this endorsement of the final phase of the "Port of Galilee - West Bulkhead and North Basin Improvement" project being coordinated at the state level by the Rhode Island Office of State Planning. Since Galilee is one of the more productive fishing ports in southern New England, we encourage any efforts to renovate and expand the shoreside facilities. Improved facilities for off-loading, dockage and pier frontage should alleviate pressures on the commercial and recreational fishing fleets. Since the National Marine Fisheries Service lacks the funds to finance this project, we encourage your agency to support the Galilee redevelopment.

Since this project has not yet been reviewed by the National Marine Fisheries Service under our construction permit mandates, we reserve our final opinion on project design for the formal permit review process.

Sincerely,

David S. Crestin  
Acting Division Chief





STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Environmental Management  
OFFICE OF THE DIRECTOR  
83 Park Street  
Providence, R.I. 02903

May 17, 1985

Colonel Carl B. Sciple  
Division Engineer  
Corps of Engineers  
424 Trapelo Road  
Waltham, MA 02254

Dear Colonel Sciple:

RE: POINT JUDITH POND, SECTION 107 STUDY

The Rhode Island Department of Environmental Management is pleased to learn that the initial appraisal of the proposed Point Judith Pond improvements has shown positive economic benefits and warrants further study. This project has the support of the area's fishing industry and will increase the level of economic activity in Snug Harbor and Galilee in the towns of South Kingstown and Narragansett.

The Department of Environmental Management endorses this project and is asking the Corps of Engineers to proceed with the Reconnaissance level study so that we can determine the cost of the Detailed Study and the estimated total project cost. The Department agrees to the eight items of local cooperation and sponsorship which must be met prior to project implementation. Extensions of this agreement beyond the Reconnaissance Study will be contingent upon the availability of funds and town council approval in both towns.

Very truly yours,

Robert L. Bendick, Jr.  
Director

RLB:LRW:jc

cc: Frank P. Geremia, DEM/Assistant Director for Operations  
Galilee Advisory Committee  
Patrick Scheidel  
Stephen Alfred  
Anna Prager